ETC.

A REVIEW OF GENERAL SEMANTICS

SPRING 1952

an international quarterly of discussion, research, and theoretical inquiry in Non-Aristotelian systems and General Semantics

in Volume IX, Number 3:

SPECIAL ISSUE ON METALINGUISTICS

BENJAMIN LEE WHORF explores the ways in which language structure determines the formation of ideas and evaluative habits.

Chinese philosophic problems do not fit into the categories of Aristotelian thought. CHANG TUNG-SUN explains why.

The U.S. State Department is training its Foreign Service personnel in metalinguistics and semantics. WILLIAM G. LEARY describes the program and its implications for improved international relations.

DOROTHY LEE reviews the selected writings of Edward Sapir. RALPH and MILDRED BUCHSBAUM review von Frisch's book on the language of the bees. GEORGE C. BARKER reviews Victor Grove's "The Language Bar."

etc. etc.

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ETC.: A REVIEW OF GENERAL SEMANTICS

OFFICIAL ORGAN OF THE INTERNATIONAL SOCIETY FOR GENERAL SEMANTICS, FOR THE ENCOURAGEMENT OF SCIENTIFIC RESEARCH AND THEORETICAL INQUIRY INTO NON-ARISTOTELIAN SYSTEMS AND GENERAL SEMANTICS. FOUR TIMES A YEAR: SEPTEMBER, DECEMBER, MARCH, JUNE.

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Foreword

WE are happy to present in this issue a group of articles of special interest to students of what Benjamin Lee Whorf called "the relation of habitual thought and behavior to language" or what later investigators have termed "metalinguistics." [1]

The Editors are indebted to Dr. Henry Lee Smith, Jr., and Dr. George L. Trager, of the School of Languages and Linguistics of the Foreign Service Institute, for the following statement on metalinguistics which they have prepared specially for this issue of *ETC.:*

METALINGUISTICS

THE TERM "metalinguistics" was devised to cover aspects of linguistic science dealing with *the relation of linguistic behavior* (*language*) *to other human behavior.*[2]

It presupposes the thorough formal analysis of a language—the *microlinguistic* analysis of its structure. Metalinguistics is dependent upon the existence of this and similarly thorough analyses of such phases of human behavior as patterning in movements, material objects and their uses, philosophical orientation, relations between persons, etc.

Like language, all of these constitute systems of learned and patterned behavior (including the products of behavior), and comprise what anthropologists call the totality of culture. For each society, the total culture and all its subdivisions must be analyzed as closed systems, having no necessary resemblance to or connection with those of any other society.

As yet, metalinguistics is a field whose study is only begun; this is because only now has microlinguistics reached a point where it can furnish complete enough descriptions of languages to establish definite limits between micro- and metalinguistics. Microlinguistics concerns itself only with *differential meaning,* that is, whether utterance fractions are the same or different. Metalinguistics, however, which may be described as the study of what people talk (or write) about and why, and how they react to it, is concerned with *meaning on all levels.* Where microlinguistics stops with the consideration of the structure of the sentence, metalinguistics deals also with *the organization of sentences into discourse and the relation of the discourse to the rest of the culture.*

[1] The use of the word "metalinguistics" in this issue is to be distinguished from its use in such expressions as "metalinguistic statement" employed by Professor Charles E. Bures in the context of formal logic in his "Critique of 'Language in Thought and Action,'" *ETC.,* IX, 35-43 (Autumn 1951).

[2] See George L. Trager, *The Field of Linguistics* (Studies in Linguistics: Occasional Papers 1, 1949; 2nd printing, 1950), 8 pp.

Whorf anticipated an important phase of metalinguistics—the analysis of the interrelationships of linguistic structure and those other structurings of experience expressed in language which may be called the world-view of the speakers of a language. It must be realized that the speakers of a language, as members of one culture, are unaware that their system of logic is not "natural" or universal, but is principally the result of this sort of interaction. At the Foreign Service Institute further studies of these interrelationships are being made.

HENRY LEE SMITH, JR.
GEORGE L. TRAGER

STUDENTS of general semantics who had the privilege of attending the late Alfred Korzybski's lectures and seminars will recall that he urged upon his hearers the reading of material—especially articles by Benjamin Lee Whorf—which today constitutes some of the basic literature of what is here called metalinguistics. Korzybski made available to his students reprints of Whorf's articles, and it was due to his influence that Whorf's essay, "Science and Linguistics," was included as a supplementary reading in Hayakawa's *Language in Action* (1941) and that "Languages and Logic" was included in Lee's anthology, *The Language of Wisdom and Folly* (1949). The reasons for Korzybski's interest in the comparative study of the structures of different languages are indicated in such passages as the following from his *Science and Sanity* (1933):

> That languages, as such, all have some structure or other is a new and, perhaps, unexpected notion. Moreover, every language having a structure, by the very nature of language, reflects in its own structure the world as assumed by those who evolved the language. In other words, we read unconsciously into the world the structure of the language we use (pp. 59-60).
>
> For no "facts" are ever free from "doctrines": so whoever fancies he can free himself from "doctrines," as expressed in the structure of the language he uses, simply cherishes a delusion, usually with strong affective components (p. 87).
>
> We do not realize what tremendous power the structure of an habitual language has. It is not an exaggeration to say that it enslaves us through the mechanism of semantic reaction and that the structure which a language exhibits, and impresses on us unconsciously, is *automatically projected* upon the world around us (p. 90).
>
> Neither Aristotle nor his immediate followers realized or could realize what has been said here. They took the structure of the primitive-made language for granted, and went ahead formulating a philosophical grammar of this primitive language, which grammar—to our great semantic detriment—they called "logic," defining it as the "laws of thought." Because of this formulation in a general theory, we are accustomed even today to inflict this "philosophical grammar" of primitive language upon our children, and so from childhood up imprison them unconsciously by the structure of

> the language and the so-called "logic," in an anthropomorphic, structurally primitive universe (p. 89).

The explicit formulation of the idea that language can have structures different from that which was formally described in Aristotle's "laws of thought" was based principally, in Korzybski's case, on his observation of the fact that the new languages of twentieth century science are as powerful as they are because they escape the limitations of aristotelian (Indo-European) language structure.[3] As he said, "The whole Einstein theory, or any other fundamental scientific theory, must be considered as the building of a new language of similar structure to the empirical facts known at a given date" (p. 30). Philipp Frank, in *Einstein, His Life and Times* (1947), similarly perceived the scientific revolution of the twentieth century as a linguistic revolution: "Einstein's *relativity of time* is a reform in *semantics*, not in metaphysics." Studying as he did the (largely unconscious) linguistic determinants of human behavior, Korzybski was impressed by the degree to which traditional habits of thought, based on traditional Western language structure, stood in the way of adequate problem-solving and adequate evaluation.

IN ORDER TO improve evaluations in social thought as well as in everyday life, Korzybski recommended, therefore, as readers of *ETC.* know, the discipline of making conscious our unconscious (aristotelian) assumptions and becoming acquainted with the possibilities of languages of radically different structure, as in mathematics and mathematical physics. Such a discipline would result, he said, in what he called "consciousness of abstracting," which may be described as the continuing awareness of the degree to which language, in the process of reporting events, imposes its own doctrinal and structural assumptions on the events reported.[4] The individual who is to a high degree conscious of the linguistic and cultural conventions governing his own abstracting processes, Korzybski claimed, is nondogmatic; he is aware of the limitations of his own perceptions and

[3] "The term 'aristotelian' as used by Korzybski can be translated 'Indo-European' for most purposes, the name of Aristotle being used largely because he was, and remains, foremost in making explicit the structural implications underlying our common Western linguistic heritage, and therefore foremost also in introducing order into Western thought. . . . The term 'non-Indo-European,' however, cannot be substituted for Korzybski's 'non-aristotelian,' since historic non-IE languages carry as many (although probably different) conscious or unconscious primitive metaphysical, prescientific, and animistic assumptions as IE languages—possibly more." Hayakawa, "What Is Meant by Aristotelian Structure of Language?" *ETC.*, V, 230 (Summer 1948).

[4] For example, the sentence "It rains" imposes a division of actor and action upon an event in which there is no such division; the sentence "The grass is green" attributes a (verbally detachable) "quality," greenness, to a "substance," grass. Out of such accidents of linguistic structure arise many of the "problems" of philosophy. See especially, in this issue, Chang Tung-sun's article, "A Chinese Philosopher's Theory of Knowledge."

observations and theories; he is able to make allowances for the fact that others may approach events with different backgrounds, hence different abstractive systems. Consequently such an individual is more capable than the semantically naive of entering into fruitful communicative interaction with others.

As Professor William G. Leary points out in this issue, such an orientation of evaluative flexibility is exactly the kind of result hoped for by the School of Languages and Linguistics in the training of U.S. foreign service and diplomatic personnel. Hence we can say that metalinguistics and general semantics have quite similar aims. Metalinguistics attempts to do for a relatively specialized group of people, through the study of comparative linguistics, what general semantics tries to do for a larger audience through the study of the methodological and linguistic assumptions underlying modern science.

Metalinguistics and general semantics are alike too in being simultaneously descriptive (in the usual scientific sense) and prescriptive (in that the facts described have implications for education, policy, and action that are virtually impossible to ignore). True, the general semanticists are overtly, and sometimes urgently, prescriptive—perhaps to the peril of their scientific reputation; while the metalinguisticians tend not to talk about the prescriptive implications of their findings (see Smith and Trager's statement above). Nevertheless, basic to metalinguistics is the perception that failure to take into account differences of language structure and other linguistic and cultural differences leads to distortions and failures of communication. The fact that metalinguistics is being used as it is in the training program of the Foreign Service Institute for the *improvement* of international communication is evidence that students of metalinguistics are not unaware of the practical and prescriptive implications of their discipline.

SOBER STUDENTS of linguistic science have often been critical of general semantics as being not firmly enough grounded in modern linguistics. On the other hand, students of general semantics have often been critical of linguistic scholarship as being over-preoccupied with the sounds of language, vowel changes, morphology, and descriptive grammar (i.e. "microlinguistics") to the exclusion of any apparent concern with the relations of language to human thought and action.

That there should be these imperfect sympathies between linguistic science and general semantics is hardly a matter for surprise: the two disciplines have different origins and different histories. But in their interest in the area of inquiry here adumbrated under the term "metalinguistics," students of linguistic science and of general semantics meet on common ground and arrive at remarkably similar conclusions. It is the hope of the Editors that this issue of *ETC.* will mark the beginning of a closer relationship between the two disciplines, to the mutual correction and enrichment of both.—*S.I.H.*

LANGUAGE, MIND, AND REALITY*

BENJAMIN LEE WHORF

FOREWORD, by JOHN B. CARROLL:[1] *"Science, the quest for truth, is a sort of divine madness like love." A better statement of the spirit with which Benjamin Lee Whorf approached the problems of the human mind could hardly be phrased; these words were indeed written by Whorf himself and are taken from the essay reprinted below. They hold the key to the astonishing fact that Whorf could almost seem given to obscurantism—that he should have gone so far off the beaten track of the typical Western scientist as to have accepted an invitation to publish his thoughts in an Indian journal of theosophy. The reader will note that Whorf addressed himself to a theosophical audience not because of any self-conversion to theosophical doctrines but because he felt that such an audience might by its nature be better prepared to receive and sympathetically understand the rather unconventional, not to say mystical, formulations which he wished to communicate—because such an audience would be ready to ascend, with Whorf, to a state beyond mind itself in order to look at the world-mind as expressed in the phenomena of language.*

That Whorf was a scientist, his writings leave no doubt. Born in Boston in 1897, he was trained as a chemical engineer at the Massachusetts Institute of Technology, graduating in 1918. Most of his professional career was spent in the employ of a Hartford fire insurance company, where he specialized in fire prevention problems arising in chemical industries. From student days, he was avocationally interested in the study of language, and through self-study acquired an impressive knowledge of a wide range of languages, not only of what he called the "standard average European" type but also of the more exotic and unusual varieties. He acquired the habit of spending several afternoons a week at the Watkinson Library in Hartford, a scholar's library which afforded a rich collection of materials in languages, particularly American Indian languages. In 1930 he obtained a leave of absence from his employer to enable him to go to Mexico and Yucatan to study the Aztec and Maya languages, under a grant from the Social Science Research Council. It was as an outcome of this visit that he published, in 1933, a remarkably ingenious suggestion as to how the non-

* Reprinted by permission of the Theosophical Society from *The Theosophist* (Madras, India), January and April issues, 1942.

[1] Lecturer on Education, Graduate School of Education, Harvard University; author of *A Survey of Linguistics and Related Disciplines*, soon to be published by the Harvard University Press.

numerical parts of the Maya hieroglyphic inscriptions and codices might be deciphered. He often found time to work on his studies at odd moments during travels for his employer, and he made frequent visits to the Yale University department of linguistics, where he sought out Edward Sapir, the eminent linguistic scientist and specialist in American Indian languages. Sapir and Whorf found themselves highly congenial, and it was undoubtedly Sapir who encouraged and guided his further studies.

Whorf became respected as a brilliant scientific analyst of languages. He was a master of phonemics, morphology, and other tools of linguistics. But from what we now know from the writings of the last ten years of his life, it is evident that Whorf's underlying motive in these studies was one that hardly any scientific linguist of the day, save Sapir, had the insight even to possess. That motive is obvious on every page of the article reprinted below: to understand the true, covert relations among language, mind, and reality. If Whorf was too daring in his postulations, the burden of proof will remain with the present and future generations of scientists. Whorf's passing, in 1941, prevented him from adding to the essential truths already evident in his work.

Except for a brief period of lecturing at Yale, Whorf never held an academic appointment of the usual sort. He claimed that his scholarly work was a luxury made possible only by the nature of his business connections. It was my privilege, under these circumstances, to have been his student—but not a student in the ordinary academic sense of the term. As a youth in the first years of high school, I made his acquaintance in 1930 as the result of a public lecture he gave concerning his experiences in Mexico. Learning of my interest in language study, he invited me to meet him every so often at the Watkinson Library or at his home. I vividly remember these meetings, which we continued to have intermittently over a period of some years. Looking over at his notes, I would watch him work out an Aztec translation, develop a hypothesis about a Maya hieroglyph, or sketch the phonemic system of Hopi. Whorf was a quiet, contemplative teacher; he would not stop at remaining silent for a seemingly interminable time while searching his mind to recall something or to think through a problem. Yet, when he became prompted to tell me of some new insight he had reached, the smoothness and lucidity of his remarks was little short of awesome. His mode of behavior was that of neither the scholar nor the business man—he gave only the impression of calm, unhurried, effortless inspiration. Self-seeking was entirely alien to him, and it is a tribute to him that he was so generous in sharing his remarkable perspectives with others.

I have been asked to suggest any excisions which might appropriately be made in the article reprinted below. After some reflection, I have decided that nothing in it is superfluous, and that even the sentences dealing with yogic philosophy, if properly interpreted, merely illustrate the particular genius with which Whorf's mind embraced all things.

PART I

IT NEEDS but half an eye to see in these latter days that science, the Grand Revelator of modern western culture, has reached, without having intended to, a frontier. Either it must bury its dead, close its ranks, and go forward into a landscape of increasing strangeness, replete with things shocking to a culture-trammelled understanding, or it must become, in Claude Houghton's expressive phrase, the plagiarist of its own past. The frontier was foreseen in principle very long ago, and given a name that has descended to our day clouded with myth. That name is Babel. For science's long and heroic effort to be strictly factual has at last brought it into entanglement with the unsuspected facts of the linguistic order. These facts the older classical science had never admitted, confronted, or understood as facts. Instead they had entered its house by the back door and had been taken for the substance of Reason itself.

What we call "scientific thought" is a specialization of the western Indo-European type of language, which has developed not only a set of different dialectics, but actually a set of different dialects. *These dialects are now becoming mutually unintelligible.* The term "space," for instance, does not and *cannot* mean the same thing to a psychologist as to a physicist. Even if psychologists should firmly resolve, come hell or high water, to use "space" only with the physicist's meaning, they could not do so, any more than Englishmen could use in English the word "sentiment" in the meanings which the similarly-spelled but functionally different French utterance *le sentiment* has in its native French.

Now this does not simply breed confusions of mere detail that an expert translator could perhaps resolve. It does something much more perplexing. Every language and every well-knit technical sub-language incorporates certain points of view and certain patterned resistances to widely divergent points of view. This is especially so if language is not surveyed as a planetary phenomenon, but is as usual taken for granted, and the local, parochial species of it used by the individual thinker taken to be its full sum. These resistances not only isolate artificially the particular sciences from each other; they restrain the scientific spirit as a whole from taking the next great step in development—a step which entails viewpoints unprecedented in science and a complete severance from traditions. For certain linguistic patterns rigidified in the dialectics of the sciences—often also embedded in the matrix of European culture from which those sciences have sprung, and long worshipped as pure Reason *per se*—have been worked to death. Even science senses that they are somehow out of focus for observing what may be very significant aspects of reality, upon the due observation of which all further progress in understanding the universe may hinge.

THUS one of the important coming steps for western knowledge is a re-examination of the linguistic backgrounds of its thinking, and for that matter of all thinking. My purpose in developing this subject before a Theosophical audi-

ence is not to confirm or affirm any Theosophical doctrines. It is because of all groups of people with whom I have come in contact, Theosophical people seem the most capable of becoming excited about ideas—new ideas. And my task is to explain an idea to all those who, if western culture survives the present welter of barbarism, may be pushed by events to leadership in reorganizing the whole human future.

This idea is one too drastic to be penned up in a catch phrase. I would rather leave it unnamed. It is the view that a noumenal world—a world of hyperspace, of higher dimensions—awaits discovery by all the sciences, which it will unite and unify, awaits discovery under its first aspect of a realm of *patterned relations,* inconceivably manifold and yet bearing a recognizable affinity to the rich and systematic organization of *language,* including *au fond* mathematics and music, which are ultimately of the same kindred as language. The idea is older than Plato, and at the same time as new as our most revolutionary thinkers. It is implied in Whitehead's world of prehensive aspects, and in relativity physics with its four-dimensional continuum and its Riemann-Christoffel tensor that sums up the *properties of the world* at any point-moment; while one of the most thought-provoking of all modern presentations, and I think the most original, is the *Tertium Organum* of Ouspensky. All that I have to say on the subject that may be new is of the *premonition in language* of the unknown, vaster world—that world of which the physical is but a surface or skin, and yet which we *are in,* and *belong to.* For the approach to reality through mathematics, which modern knowledge is beginning to make, is merely the approach through one special case of this relation to language.

This view implies that what I have called patterns are basic in a really cosmic sense, and that patterns form wholes, akin to the *Gestalten* of psychology, which are embraced in larger wholes in continual progression. Thus the cosmic picture has a serial or hierarchical character, that of a progression of planes or levels. Lacking recognition of such serial order, different sciences chop segments, as it were, out of the world, segments which perhaps cut across the direction of the natural levels, or stop short when, upon reaching a major change of level, the phenomena become of quite different type, or pass out of the ken of the older observational methods.

But in the science of linguistics, the facts of the linguistic domain compel recognition of serial planes, each explicitly given by an order of patterning observed. It is as if, looking at a wall covered with fine tracery of lacelike design, we found that this tracery served as the ground for a bolder pattern, yet still delicate, of tiny flowers, and that upon becoming aware of this floral expanse we saw that multitudes of gaps in it made another pattern like scroll-work, and that groups of scrolls made letters, the letters if followed in a proper sequence made words, the words were aligned in columns which listed and classified entities, and so on in continual cross-patterning until we found this wall to be—a great book of wisdom!

FIRST, the plane "below" the strictly linguistic phenomena is a physical, acoustic one, phenomena wrought of sound-waves; then comes a level of patterning in rippling muscles and speech organs, the physiological-phonetic plane; then the phonemic plane, patterning that makes a systematic set of consonants, vowels, accents, tones, etc. for each language; then the morphophonemic plane in which the "phonemes" of the previous level appear combined into "morphemes" (words and sub-words like suffixes, etc.); then the plane of morphology; then that of the intricate, largely unconscious patterning that goes by the meaningless name of syntax; then on to further planes still, the full import of which may some day strike and stagger us.

Speech is the best show man puts on. It is his own "act" on the stage of evolution, in which he comes before the cosmic backdrop and really "does his stuff." But we suspect the watching Gods perceive that the order in which his amazing set of tricks builds up to a great climax has been stolen—from the Universe!

The idea, entirely unfamiliar to the modern world, that nature and language are inwardly akin, was for ages well known to various high cultures whose historical continuity on the earth has been enormously longer than that of western European culture. In India, one aspect of it has been the idea of the *mantram* and of a *mantric art*. On the simplest cultural level a mantram is merely an incantation of primitive magic, such as the crudest cultures have. In the high culture it may have a different, a very intellectual meaning, dealing with the inner affinity of language and the cosmic order. At a still higher level it becomes "Mantra Yoga." Therein the mantram becomes a manifold of conscious patterns, contrived to assist the consciousness into the noumenal pattern-world—whereupon it is "in the driver's seat." It can then *set* the human organism to transmit, control, and amplify a thousandfold forces which that organism normally transmits only at unobservably low intensities.

Somewhat analogously, the mathematical formula that enables a physicist to adjust some coils of wire, tinfoil plates, diaphragms, and other quite inert and innocent gadgets into a configuration in which they can project music to a far country, puts the physicist's consciousness on to a level strange to the untrained man, and makes feasible an adjustment of matter to a very strategic configuration, one which makes possible an unusual manifestation of force. Other formulae make possible the strategic arrangement of magnets and wires in the power-house so that when the magnets (or rather the field of subtle forces, in and around the magnets) are set in motion, force is manifested in the way we call an electric current. We do not think of the designing of a radio station or a power plant as a linguistic process, but it is one nonetheless. The necessary mathematics is a linguistic apparatus, and without its correct specification of essential patterning the assembled gadgets would be out of proportion and adjustment, and would remain inert. But the mathematics used in such a case

is a *specialized* formula-language, contrived for making available a specialized type of force manifestation through metallic bodies only, namely, *electricity* as we today define what we call by that name. The mantric formula-language is specialized in a different way in order to make available a different type of force manifestation, by repatterning states in the nervous system and glands—or again rather in the subtle "electronic" or "etheric" forces in and around those physical bodies. Those parts of the organism, until such strategic patterning has been effected, are merely "innocent gadgets," as incapable of dynamic power as loose magnets and loose wires, but *in the proper pattern* they are something else again—not to be understood from the properties of the unpatterned parts, and able to amplify and activate latent forces.

IN THIS WAY I would link the subtle eastern ideas of the mantric and yogic use of language with the configurative or pattern aspect which is so basic in language. But this brings me to the most important part of my discussion. We must find out more about language! Already we know enough about it to know it is not what the great majority of men, lay or scientific, think it is. The fact that we talk almost effortlessly, unaware of the exceedingly complex mechanism we are using, creates an illusion. We think we know how it is done, that there is no mystery; we have all the answers. Alas, what wrong answers! It is like the way a man's uncorrected sense-impressions give him a picture of the universe that is simple, sensible, and satisfying, but very wide of the truth.

Consider how the world appears to any man, however wise and experienced in human life, who has never heard one word of what science has discovered about the Cosmos. To him the earth is flat; the sun and moon are shining objects of small size that pop up daily above an eastern rim, move through the upper air, and sink below a western edge; obviously they spend the night somewhere underground. The sky is an inverted bowl made of some blue material. The stars, tiny and rather near objects, seem as if they might be alive, for they "come out" from the sky at evening like rabbits or rattle-snakes from their burrows, and slip back again at dawn. "Solar system" has no meaning to him, and the concept of a "law of gravitation" is quite unintelligible—nay, even nonsensical. For him bodies do not fall because of a law of gravitation, but rather "because there is nothing to hold them up"—*i.e.*, because he cannot imagine their doing anything else. He cannot conceive space without an "up" and "down" or even without an "east" and "west" in it. For him the blood does not circulate; nor does the heart pump blood; he thinks it is a place where love, kindness, and thoughts are kept. Cooling is not a removal of heat but an addition of "cold"; leaves are green not from the chemical substance chlorophyll in them, but from the "greenness" in them. It will be impossible to reason him out of these beliefs. He will assert them as plain, hard-headed common sense; which means that they satisfy him because they are completely adequate as a

system of communication between him and his fellow-men. That is, they are adequate *linguistically* to his social needs, and will remain so until an additional group of needs is felt and is worked out in language.

But as this man is in conception of the physical universe, of whose scope and order he has not the faintest inkling, so all of us, from rude savage to learned scholar, are in conception of language. Only the science of linguistics has begun to penetrate a little into this realm, its findings still largely unknown to the other disciplines. Natural man, whether simpleton or scientist, knows no more of the linguistic forces that bear upon him than the savage knows of gravitational forces. He supposes that talking is an activity in which he is free and untrammelled. He finds it a simple, transparent activity, for which he has the necessary explanations. But these explanations turn out to be nothing but statements of the *needs that impel him to communicate*. They are not germane to the process by which he communicates. Thus he will say that he thinks something, and supplies words for the thoughts "as they come." But his explanation of why he should have such and such thoughts before he came to utter them, again turns out to be merely the story of his social needs at that moment. It is a dusty answer that throws no light. But then he supposes that there need be no light thrown on this talking process, since he can manipulate it anyhow quite well for his social needs. Thus he implies, wrongly, that thinking is an *obvious*, straightforward activity, the same for all rational beings, of which language is the straightforward expression.

ACTUALLY, thinking is most mysterious, and by far the greatest light upon it that we have is thrown by the study of language. This study shows that the forms of a person's thoughts are controlled by inexorable laws of pattern of which he is unconscious. These patterns are the unperceived intricate systematizations of his own language—shown readily enough by a candid comparison and contrast with other languages, especially those of a different linguistic family. His thinking itself is in a language—in English, in Sanskrit, in Chinese.[2] And every language is a vast pattern-system, different from others, in which is culturally ordained the forms and categories by which the personality not only communicates, but analyzes nature, notices or neglects types of relationship and phenomena, channels his reasoning, and builds the house of his consciousness.

This doctrine is new to western science, but it stands on unimpeachable evidence. Moreover, it is known, or something like it is known, to the philosophies

[2] To anticipate the text, "thinking in a language" does not necessarily have to use *words*. An uncultivated Choctaw can as easily as the most skilled *litterateur* contrast the tenses or the genders of two experiences, though he has never heard of any *words* like "tense" or "gender" for such contrasts. Much thinking never brings in words at all, but manipulates whole paradigms, word-classes, and such grammatical orders "behind" or "above" the focus of personal consciousness.

of India and to modern Theosophy. This is masked by the fact that the philosophical Sanskrit terms do not supply the exact equivalent of my term "language" in the broad sense of the linguistic order. The linguistic order embraces all symbolism, all symbolic processes, all processes of reference and of logic. Terms like *Nāma* refer rather to sub-grades of this order—the lexical level, the phonetic level. The nearest equivalent is probably *Manas,* to which our vague word "mind" hardly does justice. Manas in a broad sense is a major hierarchical grade in the world-structure—a "manasic plane" as it is indeed explicitly called. Here again "mental plane" is apt to be misleading to an English-speaking person. English "mental" is an unfortunate word, a word whose function in our culture is often only to stand in lieu of an intelligent explanation, and which connotes rather a foggy limbo than a cosmic structural order characterized by patterning. Sometimes Manas is used to mean, however, simply the personal psyche; this according to Mr. Fritz Kunz is the case in the famous saying of *The Voice of the Silence:* "The mind is the great slayer of the real."

It is said that in the plane of Manas there are two great levels, called the *"Rūpa"* and *"Arūpa"* levels. The lower is the realm of "name and form," Nāma and Rūpa. Here "form" means organization in space ("our" three-dimensional space). This is far from being co-extensive with pattern in a universal sense. And Nāma, "name," is not language or the linguistic order, but only one level in it, the level of the process of "lexation" or of giving words (names) to parts of the whole manifold of experience, parts which are thereby made to stand out in a semi-fictitious isolation. Thus a word like "sky," which in English can be treated like "board" (the sky, a sky, skies, some skies, piece of sky, etc.), leads us to think of a mere optical apparition in ways appropriate only to relatively isolated solid bodies. "Hill" and "swamp" persuade us to regard local variations in altitude or soil-composition of the ground as distinct *things* almost like tables and chairs. Each language performs this artificial chopping up of the continuous spread and flow of existence in a different way. Words and speech are not the same thing. As we shall see, the patterns of sentence structure that guide words are more important than the words.

Thus the level of Rūpa and Nāma—shape-segmentation and vocabulary—is part of the linguistic order, but a somewhat rudimentary and not self-sufficient part. It depends upon a higher level of organization, the level at which its *combinatory scheme* appears. This is the Arūpa level—the pattern world *par excellence.* Arūpa, "formless," does not mean without linguistic form or organization, but without reference to spatial, visual shape, marking out in space, which as we saw with "hill" and "swamp" is an important feature of reference on the lexical level. Arūpa is a realm of patterns that can be "actualized" in space and time in the materials of lower planes, but are themselves indifferent to space and time. Such patterns are not like the meanings of words, but they are some-

what like the way meaning appears in sentences. They are not like individual sentences but like *schemes* of sentences and designs of sentence structure. Our personal conscious "minds" can understand such patterns in a limited way by using mathematical or grammatical *formulae* into which words, values, quantities, etc., can be substituted. A rather simple instance will be given presently.

It is within the possibilities of the "culture of consciousness" that the Arūpa level of the "mental" plane may be contacted directly in an expansion of consciousness. In Ouspensky's book, *A New Model of the Universe,* there are arresting glimpses of extraordinary mental states which that philosopher attained --adumbrations only, for these completely "non-lexical" vistas cannot be well put into words. He speaks of realms of "moving hieroglyphs" composed entirely of "mathematical relations," and of the expansion and ramification of such a "hieroglyph" till it covered a whole aspect of the universe. Ouspensky's mathematical predilections and his study of such things as non-Euclidean geometries, hyperspace, and the relation between time and consciousness, may have led him to stress mathematical analogies. Mathematics is a special kind of language, expanded out of special sentences containing the numeral words, 1, 2, 3, 4, . . . x, y, z, etc. But every other type of sentence of every language is also the potential nucleus of a far-reaching system. To very few is it granted to attain such consciousness as a durable state, yet many mathematicians and scientific linguists must have had the experience of "seeing" in one fugitive flash a whole system of relationships never before suspected of forming a unity. The harmony and scientific beauty in the whole vast system momently overwhelms one in a flood of aesthetic delight. To "see," for instance, how all the English elementary sounds ("phonemes") and their groupings are coordinated by an intricate yet systematic law into all possible forms of English monosyllabic words, meaningful or nonsensical, existent or still unthought of, excluding all other forms as inevitably as the chemical formula of a solution precludes all but certain shapes of crystals from emerging—this might be a distinct experience.

TO SHOW the full formula for this law or pattern—a so-called "morphophonemic structural formula"—I should need a large piece of paper. I can however set up a condensed form of it as:

$$\begin{aligned} &\text{O, C} - \text{ng, } C_1C_2\text{, } C_3C_4\text{, etc. . . .} \\ &\text{s} \pm C_mC_n + \text{V} + (\text{V}_1)\ \text{O}, \pm (\text{r, w, y}); \\ &\qquad \text{C} - \text{h, } C'_1C'_2\text{, } C'_3C'_4\text{, etc. . . .} \\ &\qquad C'_mC'_n \pm (\text{t/d, s/z, st/zd}).[3] \end{aligned}$$

This formula requires that the English words be symbolized or "spelt" accord-

[3] The full formula from which this is abbreviated is printed and explained in my paper "Linguistics as an Exact Science" in *Technology Review,* December 1940, Massachusetts Institute of Technology, Cambridge, Mass.

ing to standard phonemic spelling of the type described by Leonard Bloomfield in his book *Language*. In this system the diphthongal vowels must be represented by a pure vowel (V) followed by *w* or *y* from the term (r, w, y), so that "note" is symbolized *nowt* (or *newt*, depending on the dialect), "date" is *deyt*, "ice" is *ays*. That this is correct analysis on the physical or acoustic level is shown by the fact that if we reverse a phonographic recording of "ice" we get a sound like *sya*, and if we say *"sya"* properly into the phonograph and reverse it the machine will say "ice." For *English* this analysis happens to be exact also on the structural level two stages above the acoustic one, for the *ys* of *ays* (ice) is seen to be on the same line of pattern as the *ls* of *els* (else), the *ns* of *sins* (since) the *ts* of *hats*, etc.—it is part of a general architectonic scheme of having two consonants together.

Now, by reading the commas in the formula as "or" we see that the formula is equivalent to a large series of subsidiary formulae. One of the simplest of these is O + V + C — h (see how it is contained in the big formula) which means that the word can begin without a consonant and with any one vowel followed by any one consonant except *h*—giving us words like *at, or, if*. Changing the first term to the next symbol in the big formula, we get C — ng + V + C — h, which means that the word, ending as before, can begin with any single English consonant except the *ng* sound as in "sing" (this sound ought to be written with *one* symbol, but in deference to the printer I shall employ the usual digraph). This pattern gives us the long array of words like *hat, bed, dog, man*, and permits us to coin new ones like *tig, nem, zib*—but not, be it noted, *ngib* or *zih*.

So far the patterns are simple. From now on they become intricate! The formula in this abbreviated form needs along with it a series of lists of assorted consonants, like so many laundry lists, each list being represented by one of the symbols C_1, C_2, etc. The formula C_1C_2 means that you can begin the word with any consonant out of list C_1 and follow it with any from list C_2, which happens to contain only *r* and *l*. Since C_1 contains p, b, f, for instance, we can have words like *pray, play, brew, blew, free, flee*, and the nonsensical *frig, blosh*, etc. But suppose we want a word beginning with *sr, zr, tl*, or *dl*. We go to our list C_1, but to our surprise there is no *s, z, t*, or *d*, on it. We appear to be stumped! We pick up our other lists, but are no better off. There is no way of combining our lists according to the formula to get these initial combinations. Evidently there just aren't any such English words; and what is more, any budding Lewis Carrolls or Edward Lears will somehow mysteriously refuse to coin such words. This shows that word-coining is no act of unfettered imagination, even in the wildest flights of nonsense, but a strict use of already patterned materials. If asked to invent forms not already prefigured in the patternment of his language, the speaker is negative in the same manner as if asked to make fried eggs without the eggs!

THUS the formula sums up every combination that English one-syllable words or word-like forms have, and bars out every one they do not and cannot have. Contained in it is the *mpst* of glimpsed, the *ksths* of sixths, the *ftht* of "he fifthed it," the *nchst* of the queer but possible "thou *munchst* it greedily," and multitudes of other "rugged sounds which to our mouths grow sleek," but which would have "made Quintilian stare and gasp." At the same time the formula *bars out* numerous smooth but to us difficult (because unpatterned) combinations, like *litk, fpat, nwelng, dzogb,* and a myriad more, all possible and easy to some languages, but not to English.

It will be evident that implicit in our one-syllable words is an undreamed-of complexity of organization, and that the old gag, "say it in words of one syllable," as a metaphor of simplicity, is from the standpoint of a more penetrative insight the most arrant nonsense! Yet to such insight this old cliché bears unconscious witness to the truth that those who easily and fluently use the intricate systems of language are utterly blind and deaf to the very existence of those systems, until the latter have been, not without some difficulty, pointed out.

And the adage "as above, so below" applies strongly here. As below, on the phonological plane of language, significant behavior is ruled by pattern from outside the focus of personal consciousness, so is it on the higher planes of language that we call expression of the thought. As we shall see in Part II, thinking also follows a network of tracks laid down in the given language, an organization which may concentrate systematically upon certain phases of reality, certain aspects of intelligence, and systematically discard others featured by other languages. The individual is utterly unaware of this organization and is constrained completely within its unbreakable bonds.

PART II

WE SAW in Part I that in linguistic and mental phenomena significant behavior (or what is the same, both behavior and significance, so far as interlinked) are ruled by a specific system or organization, a "geometry" of form-principles characteristic of each language. This organization is imposed from outside the narrow circle of the personal consciousness, making of that consciousness a mere puppet whose linguistic maneuverings are held in unsensed and unbreakable bonds of pattern. It is as if the personal mind, which selects words but is largely oblivious to pattern, were in the grip of a higher, far more intellectual mind which has very little notion of houses and beds and soup-kettles, but can systematize and mathematize on a scale and scope that no mathematician of the schools ever remotely approached.

And now appears a great fact of human brotherhood—that human beings are all alike in this respect. So far as we can judge from the systematics of language, the higher mind or "unconscious" of a Papuan head-hunter can mathe-

matize quite as well as that of Einstein; and conversely, scientist and yokel, scholar and tribesman, all use their personal consciousness in the same dim-witted sort of way, and get into similar kinds of logical *impasse*. They are as unaware of the beautiful and inexorable systems that control them as a cowherd is of cosmic rays. Their understanding of the processes involved in their talk and ratiocination is a purely superficial, pragmatic one, comparable to little Sue Smith's understanding of the radio, which she turns off in such a way as to evoke a bedtime story. Men even show a strong disposition to make a virtue of this ignorance, to condemn efforts at a better understanding of the mind's workings as "impractical," or as "theories" if the condemner happens to be a yokel, or as "metaphysics" or "mysticism" or "epistemology" if he happens to be wearing the traditionally correct turn-out of a scientist. Western culture in particular reserves for the investigators of language its most grudging meed of recognition and its meagrest rewards, even though it has to counter the natural human tendency to find language, mysterious as it is, the most fascinating of subjects—one about which men love to talk and speculate unscientifically, to discuss endlessly the meaning of words, or the odd speech of the man from Boston as it appears to the man of Oshkosh, or vice versa.

The higher mind would seem to be able to do any kind of purely intellectual feat, but not to "be conscious" on the personal level. That is, it does not focus on practical affairs and on the personal ego in its personal, immediate environment. Certain dreams and exceptional mental states may lead us to suppose it to be conscious on its own plane, and occasionally its consciousness may "come through" to the personality; but barring techniques like Yoga, it ordinarily makes no nexus with the personal consciousness. We could call it a higher ego, bearing in mind a distinctive trait, appearing through every language, and its one striking resemblance to the personal self; namely, that it organizes its systems around a nucleus of three or more pronominal "person" categories, centered upon one we call the first person singular. It can function in any linguistic system—a child can learn any language with the same readiness, from Chinese, with its separately toned and stressed monosyllables, to Nootka of Vancouver Island, with its frequent one-word sentences such as *mamamamamahln'iqk'ok-maqama*—"they each did so because of their characteristic of resembling white people." [4]

BECAUSE of the systematic, configurative nature of higher mind, the "pattern-ment" aspect of language always overrides and controls the "lexation" (Nāma) or name-giving aspect. Hence the meanings of specific words are less

[4] This word and sentence contains only one *nāma* or lexation, *mamahl* or "white-race person." The rest is all grammatical pattern which can refer to anything. The Nootka stem or Nāma for "doll" with the same operations done upon it would mean "they each did so because of their doll-like-ness."

important than we fondly fancy. Sentences, not words, are the essence of speech, just as equations and functions, and not bare numbers, are the real meat of mathematics. We are all mistaken in our common belief that any word has an "exact meaning." We have seen that the higher mind deals in symbols that have no fixed reference to anything, but are like blank checks, to be filled in as required, that stand for "any value" of a given variable, like the C's and V's in the formula cited in Part I, or the *x, y, z* of algebra. There is a queer Western notion that the ancients who invented algebra made a great discovery, though the human unconscious has been doing the same sort of thing for eons! For the same reason the ancient Mayas or the ancient Hindus, in their staggering cycles upon cycles of astronomical numbers, were simply being human. We should not however make the mistake of thinking that words, even as used by the lower personal mind, represent the opposite pole from these variable symbols, that a word *does* have an exact meaning, stands for a given thing, is only *one* value of a variable.

Even the lower mind has caught something of the algebraic nature of language; so that words are in between the variable symbols of pure patternment (Arūpa) and true fixed quantities. That part of meaning which is in words, and which we may call "reference," is only relatively fixed. Reference of words is at the mercy of the sentences and grammatical patterns in which they occur. And it is surprising to what a minimal amount this element of reference may be reduced. The sentence "I went all the way down there just in order to see Jack" contains only one fixed concrete reference, namely, "Jack." The rest is pattern attached to nothing specifically; even "see" obviously does not mean what one might suppose, namely, to receive a visual image.

Or again, in word reference we deal with size by breaking it into size classes—small, medium, large, immense, etc.—but size objectively is not divided into classes, but is a pure continuum of relativity. Yet we think of size constantly as a set of classes because language has segmented and named the experience in this way. Number-words may refer not to number as counted, but to number classes with elastic boundaries. Thus English "few" adjusts its range according to the size, importance or rarity of the reference. A "few" kings, battleships, or diamonds might be only three or four, a "few" peas, rain-drops or tea-leaves might be thirty or forty.

You may say, "Yes, of course this is true of words like large, small, and the like; they are obviously relative terms, but words like dog, tree, house, are different—each names a specific thing." Not so; these terms are in the same boat as "large" and "small." The word "Fido" said by a certain person at a certain time may refer to a specific thing, but the word "dog" refers to a class with elastic limits. The limits of such classes are different in different languages. You might think that "tree" means the same thing everywhere and to everybody. Not at all. The Polish word that means "tree" also includes the meaning

"wood." The context or sentence pattern determines what sort of object the Polish word (or any word, in any language) refers to. In Hopi, an American Indian language of Arizona, the word for dog, *pohko,* includes pet animal or domestic animal of any kind. Thus "pet eagle" in Hopi is literally "eagle-dog"; and having thus fixed the context a Hopi might next refer to the same eagle as so-and-so's *pohko.*

BUT LEST this be dismissed as the vagary of a "primitive" language (no language is "primitive"), let us take another peep at our own beloved English. Take the word *hand.* In "his hand" it refers to a location on the human body, in "hour hand" to a strikingly dissimilar object, in "all hands on deck" to another reference, in "a good hand at gardening" to another, in "he held a good hand (at cards)" to another, while in "he got the upper hand" it refers to nothing but is dissolved into a pattern of orientation. Or consider the word *bar* in the phrases: iron bar, bar to progress, he should be behind bars, studied for the bar, let down all the bars, bar of music, sand bar, candy bar, mosquito bar, bar sinister, bar none, ordered drinks at the bar!

But, you may say, these are popular idioms, not scientific and logical use of language. Oh, indeed? "Electrical" is supposed to be a scientific word. Do you know what its referent is? Do you know that the "electrical" in "electrical apparatus" is not the same "electrical" as the one in "electrical expert"? In the first it refers to a current of electricity in the apparatus, but in the second it does not refer to a current of electricity in the expert. When a word like "group" can refer either to a sequence of phases in time or a pile of articles on the floor, its element of reference is minor. Referents of scientific words are often conveniently vague, markedly under the sway of the patterns in which they occur. It is very suggestive that this trait, so far from being a hall-mark of Babbittry, is most marked in intellectual talk, and—*mirabile dictu*—in the language of poetry and love! And this needs must be so, for science, poetry, and love are alike in being "flights" above and away from the slave-world of literal reference and humdrum prosaic details, attempts to widen the petty narrowness of the personal self's outlook, liftings toward Arūpa, toward that world of infinite harmony, sympathy and order, of unchanging truths and eternal things. And while all words are pitiful enough in their mere "letter that killeth," it is certain that scientific terms like "force," "average," "sex," "allergic," "biological," are not less pitiful, and in their own way no more certain in reference than "sweet," "gorgeous," "rapture," "enchantment," "heart and soul," or "star dust." You have probably heard of "star dust"—what is it? Is it a multitude of stars, a sparkling powder, the soil of the planet Mars, the Milky Way, a state of day-dreaming, poetic fancy, pyrophoric iron, a spiral nebula, a suburb of Pittsburgh, or a popular song? You don't know, and neither does anybody. The word—for it is one *lexation,* not two—has no reference of its own. Some words are

like that.[5] As we have seen, reference is the lesser part of meaning, patternment the greater. Science, the quest for truth, is a sort of divine madness like love. And music—is it not in the same category? Music is a quasi-language based entirely on patternment, without having developed lexation.

SOMETIMES the sway of pattern over reference produces amusing results, when a pattern engenders meanings utterly extraneous to the original lexation reference. The lower mind is thrown into bewilderment, cannot grasp that compelling formulae are at work upon it, and resorts wildly and with glad relief to its favorite obvious type of explanation, even "seeing things" and "hearing things" that help out such explanation. The word *asparagus,* under the stress of purely phonetic English patterns of the type illustrated in the formula cited in Part I, rearranges to *sparagras;* and then since "sparrer" is a dialectical form of "sparrow," we find "sparrow grass" and then religiously accepted accounts of the relation of sparrows to this "grass." "Cole slaw" came from German *Kohlsalat,* "cabbage salad," but the stress of the pattern tending to revamp it into "cold slaw" has in some regions produced a new lexation "slaw," and a new dish "hot slaw"! Children of course are constantly repatterning, but the pressure of adult example eventually brings their language back to the norm; they learn that Mississippi is not Mrs. Sippy, and the equator is not a menagerie lion but an imaginary line. Sometimes the adult community does not possess the special knowledge needed for correction. In parts of New England, Persian cats of a certain type are called Coon cats, and this name has bred the notion that they are a hybrid between the cat and the "coon" (raccoon). This is often firmly believed by persons ignorant of biology, since the stress of the linguistic pattern (animal-name 1 modifying animal-name 2) causes them to "see" (or as the psychologists say "project") objective racoon quality as located on the body of the cat—they point to its bushy tail, long hair, and so on. I knew of an actual case, a woman who owned a fine "Coon cat," and who would protest to her friend: "Why, just *look* at him—his tail, his funny eyes—can't you see it?" "Don't be silly!" quoth her more sophisticated friend. "Think of your natural history! Coons cannot breed with cats; they belong to a different family." But the lady was so sure that she called on an eminent zoologist to confirm her. He is said to have remarked, with unwavering diplomacy, "If you like to think so, just think so." "He was even more cruel than you!" she snapped at her friend, and remained convinced that her pet was the outcome of an encounter between a philandering raccoon and a wayward cat! In just such ways on a vaster scale is woven the web of Māyā, illusion begotten of intrenched selfhood. I am told that Coon cats received their name from one Captain Coon, who brought the first of these Persian cats to the State of Maine in his ship.

[5] Compare "kith" and "throe," which give no meaning, and a bewildering effect, without the patterns "kith and kin" and "in throes of."

In more subtle matters we all, unknowingly, project the linguistic relationships of a particular language upon the universe, and *see* them there, as the good lady *saw* a linguistic relation (Coon = raccoon) made visible in her cat. We say "see that wave"—the same pattern as "see that house." But without the projection of language no one ever saw a single wave. We see a surface in everchanging undulating motions. Some languages cannot say "a wave"; they are closer to reality in this respect. Hopi say *walalata,* "plural waving occurs," and can call attention to one place in the waving just as we can. But since actually a wave cannot exist by itself, the form which corresponds to our singular, *wala,* is not the equivalent of English "a wave," but means "a slosh occurs," as when a vessel of liquid is suddenly jarred.

English pattern treats "I hold it" exactly like "I strike it," "I tear it," and myriads of other propositions that refer to actions effecting changes in matter. Yet "hold" in plain fact is no action, but a state of relative positions. But we think of it, even see it, as an action, because language sets up the proposition in the same way as it sets up a much more common class of propositions dealing with movements and changes. We *ascribe* action to what we call "hold" because the formula, substantive + verb = actor + his action, is fundamental in our sentences. Thus we are compelled in many cases to read into nature fictitious acting-entities simply because our sentence patterns require our verbs, when not imperative, to have substantives before them. We are obliged to say "it flashed" or "a light flashed," setting up an actor *it,* or *a light,* to perform what we call an action, *flash.* But the flashing and the light are the same; there is no thing which does something, and no doing. Hopi says only *rehpi.* Hopi can have verbs without subjects, and this gives to that language power as a logical system for understanding certain aspects of the cosmos. Scientific language, being founded on western Indo-European and not on Hopi, does as we do, sees sometimes actions and forces where there may be only states. For do you not conceive it possible that scientists as well as ladies with cats all unknowingly project the linguistic patterns of a particular type of language upon the universe, and *see* them there, rendered visible on the very face of nature? A change in language can transform our appreciation of the cosmos.

ALL THIS is typical of the way the lower personal mind, caught in a vaster world inscrutable to its methods, uses its strange gift of language to weave the web of Māyā or illusion, to make a provisional analysis of reality and then regard it as final. Western culture has gone farthest here, farthest in determined thoroughness of provisional analysis, and farthest in determination to regard it as final. The commitment to illusion has been sealed in western Indo-European language, and the road out of illusion for the West lies through a wider understanding of language than western Indo-European alone can give. This is the "Mantra Yoga" of the western consciousness, the next great step, which it is

now ready to take. It is probably the most suitable way for western man to begin that "culture of consciousness" which will lead him to a great illumination.

Again, through this sort of understanding of language is achieved a great phase of human brotherhood. For the scientific understanding of very diverse languages—not necessarily to speak them, but to analyze their structure—is a lesson in brotherhood which is brotherhood in the universal human principle—the brotherhood of the "Sons of Manas." It causes us to transcend the boundaries of local cultures, nationalities, physical peculiarities dubbed "race," and to find that in their linguistic systems, though these systems differ widely, yet in the order, harmony, and beauty of the systems, and in their respective subtleties and penetrating analysis of reality, all men are equal. This fact is independent of the state of evolution as regards material culture, savagery, civilization, moral or ethical development, etc., a thing most surprising to the cultured European, a thing shocking to him, indeed a bitter pill! But it is true; the crudest savage may unconsciously manipulate with effortless ease a linguistic system so intricate, manifoldly systematized, and intellectually difficult that it requires the life-time study of our greatest scholars to describe its workings. The manasic plane and the "higher ego" have been given to all, and the evolution of human language was complete, and spread in its proud completeness up and down the earth, in a time far anterior to the oldest ruin that molders in the soil today.

Linguistic knowledge entails understanding many different beautiful systems of logical analysis. Through it, the world as seen from the diverse viewpoints of other social groups, that we have thought of as alien, becomes intelligible in new terms. Alienness turns into a new and often clarifying way of looking at things. Consider Japanese. The view of the Japanese that we get outwardly from their governmental policy seems anything but conducive to brotherhood. But to approach the Japanese through an aesthetic and scientific appreciation of their language transforms the picture. *That* is to realize kinship on the cosmopolitan levels of the spirit. One lovely pattern of this language is that its sentence may have two differently ranked subjects. We are familiar with the idea of two ranks of *object* for our verbs, an immediate and a more remote goal, or direct and indirect object as they are commonly called. We have probably never thought of the possibilities of a similar idea applied to *subjects*. This idea is put to work in Japanese. The two subjects—call them subject 1 and subject 2—are marked by the particles *wa* and *ga*, and a diagram might show them with a line drawn from each subject-word, the two lines converging upon the same predication, whereas our English sentence could have only one subject with one line to the predicate. An example would be the way of saying "Japan is mountainous": "Japan$_1$ mountain$_2$ (are) many";[6] or: "Japan, in regard to it mountains are many." "John is long-legged" would be "John$_1$ leg$_2$ (are) long." This pattern

[6] "Are" is in parenthesis because "be many" is expressed by a single verb-like word. The Japanese ordinarily does not use a plural.

gives great conciseness at the same time with great precision. Instead of the vagueness of our "mountainous," the Japanese can, with equal compactness of formulation, distinguish "mountainous" meaning that mountains not always high are abundant, from "mountainous" meaning that mountains not abundant relative to the whole area are high. We see how the logical uses of this pattern would give to Japanese great power in concise scientific operations with ideas, could this power be properly developed.

THE MOMENT we begin scientific, unbiased *research* into language we find, in people and cultures with the most unprepossessing exteriors, beautiful, effective, and scientific devices of expression unknown to western Indo-European tongues or mentalities. The Algonquin languages are spoken by very simple people, hunting and fishing Indians, but they are marvels of analysis and synthesis. One piece of grammatical finesse peculiar to them is called the obviative. This means that their pronouns have four persons instead of three, or from our standpoint two third persons. This aids in compact description of complicated situations, for which we should have to resort to cumbersome phraseology. Let us symbolize their third and fourth persons by attaching the numerals 3 and 4 to our written words. The Algonquins might tell the story of William Tell like this: "William Tell called his$_3$ son and told him$_4$ to bring him$_3$ his$_3$ bow and arrow, which$_4$ he$_4$ then brought to him.$_3$ He$_3$ had him$_4$ stand still and placed an apple on his$_4$ head, then took his$_3$ bow and arrow and told him$_4$ not to fear. Then he$_3$ shot it$_4$ off his$_4$ head without hurting him$_4$." Such a device would greatly help in specifying our complex legal situations, getting rid of "the party of the first part" and "the aforesaid John Doe shall, on his part, etc."

Chichewa, a language related to Zulu, spoken by a tribe of unlettered Negroes in East Africa, has two past tenses, one for past events with present result or influence, one for past without present influence. A past as recorded in external situations is distinguished from a past recorded only in the psyche or memory; a new view of *time* opens before us. Let 1 represent the former and 2 the latter; then ponder these Chichewa nuances: I came$_1$ here; I went$_2$ there; he was$_2$ sick; he died$_1$; Christ died$_2$ on the cross; God created$_1$ the world. "I ate$_1$" means I am not hungry; "I ate$_2$" means I am hungry. If you were offered food and said: "No, I have eaten$_1$," it would be all right, but if you used the other past tense you would be uttering an insult. A Theosophical speaker of Chichewa might use tense 1 in speaking of the past involution of Monads, which has enabled the world to be in its present state, while he might use tense 2 for, say, long-past planetary systems now disintegrated and their evolution done. If he were talking about Reincarnation he would use 2 for events of a past incarnation simply in their own frame of reference, but he would use 1 in referring to or implying their "Karma." It may be that these primitive folk are equipped

with a language which, if they were to become philosophers or mathematicians, could make them our foremost thinkers upon *time*.

Or take the Coeur d'Alene language, spoken by the small Indian tribe of that name in Idaho. Instead of our simple concept of "cause," founded on our simple "makes it (him) do so," the Coeur d'Alene grammar requires its speakers to discriminate (which of course they do automatically) between three causal processes, denoted by three causal verb-forms: (1) growth, or maturation of an inherent cause, (2) addition or accretion from without, (3) secondary addition *i.e.,* of something affected by process 2. Thus, to say "it has been made sweet" they would use form 1 for a plum sweetened by ripening, form 2 for a cup of coffee sweetened by dissolving sugar in it, and form 3 for griddle cakes sweetened by syrup made by dissolving sugar. If, given a more sophisticated culture, their thinkers erected these now unconscious discriminations into a theory of triadic causality, fitted to scientific observations, they might thereby produce a valuable intellectual tool for science. *We* could imitate artificially such a theory, perhaps, but we could *not* apply it, for *we* are not habituated to making such distinctions with effortless ease in daily life. Concepts have a basis in daily talk before scientific workers will attempt to use them in the laboratory. Even relativity has such a basis in the western Indo-European languages (and others) —the fact that these languages use many space words and patterns for dealing with time.

LANGUAGE has further significance in other psychological factors on a different level from modern linguistic approach but of importance in music, poetry, literary style, and eastern mantram. What I have been speaking of thus far concerns the plane of Manas in the more philosophical sense, the "higher unconscious" or the "soul" (in the sense as used by Jung). What I am about to speak of concerns the "psyche" (in the sense as used by Freud), the "lower" unconscious, the Manas which is especially the "slayer of the real," the plane of Kāma, of emotion or rather feeling (Gefühl). In a serial relation containing the levels of Nāma-Rūpa and Arūpa, this level of the unconscious psyche is on the other side of Nāma-Rūpa from Arūpa, and Nāma or lexation mediates in a sense between these extremes. Hence the psyche is the psychological correlative of the phonemic level in language, related to it not structurally as is Nāma or lexation, not by using it as building blocks, as word-making uses the phonemes (vowels, consonants, accents, etc.); but related as the feeling-content of the phonemes. There is a universal, Gefühl-type way of linking experiences, which shows up in laboratory experiments and appears to be independent of language—basically alike for all persons.

Without a serial or hierarchical order in the universe it would have to be said that these psychological experiments and linguistic experiments contradict each other. In the psychological experiments human subjects seem to associate

the experiences of bright, cold, sharp, hard, high, light (in weight), quick, high-pitched, narrow, and so on in a long series, with each other; and conversely the experiences of dark, warm, yielding, soft, blunt, low, heavy, slow, low-pitched, wide, etc., in another long series. This occurs whether the *words* for such associated experiences resemble or not, but the ordinary person is likely to *notice* a relation to words only when it is a relation of likeness to such a series in the vowels or consonants of the words, and when it is a relation of contrast or conflict it is passed unnoticed. The noticing of the relation of likeness is an element in sensitiveness to literary style or to what is often rather inaccurately called the "music" of words. The noticing of the relation of conflict is much more difficult, much more a freeing oneself from illusion, and though quite "unpoetical" it is really a movement toward Higher Manas, toward a higher symmetry than that of physical sound.

What is significant for our thesis is that language, through lexation, has made the speaker more acutely conscious of certain dim psychic sensations; it has actually produced awareness on lower planes than its own; a power of the nature of magic. There is a yogic mastery in the power of language to remain independent of lower-psyche facts, to override them, now point them up, now toss them out of the picture, to mould the nuances of words to its own rule, whether the psychic ring of the sounds fits or not. If the sounds fit, the psychic quality of the sounds is increased, and this can be noticed by the layman. If the sounds do not fit, the psychic quality changes to accord with the linguistic meaning, no matter how incongruous with the sounds, and this is not noticed by the layman.

Thus the vowels *a* (as in *father*), *o*, *u*, are associated in the laboratory tests with the dark-warm-soft series, and *e* (English *a* in *date*), *i* (English *e* in *be*) with the bright-cold-sharp set. Consonants also are associated about as one might expect from ordinary naive feeling in the matter. What happens is that when a word has an acoustic similarity to its own meaning we can notice it, as in English *soft* and German *sanft*. But when the opposite occurs nobody notices it. Thus German *zart* (*tsart*) "tender" has such a "sharp" sound, in spite of its *a*, that to a person who does not know German it calls up the bright-sharp meanings, but to a German it "sounds" *soft*—and probably warm, dark, etc., also. An even better case is *deep*. Its acoustic association should be like that of *peep* or of such nonsense-words as *veep, treep, queep,* etc., *i.e.,* as bright, sharp, quick. But its linguistic meaning in the English language happens to refer to the wrong sort of experience for such an association. This fact completely overrides its objective sound, causing it to "sound" subjectively quite as dark, warm, heavy, soft, etc., as though its sounds really were of that type. It takes illusion-freeing, if unpoetic, linguistic analysis to discover this clash between two "musics," one more mental and one more psychic, in the word. Manas is able to disregard properties of the psychic plane, just as it can disregard whether an equational *x*

refers to automobiles or sheep. It can project parts of its own patterns upon experience in such a way that they distort, and promote illusion; or again in such a way that they illuminate, and build up scientific theories and tools of research.

YOGA is defined by Patanjali as the complete cessation of the activity of the versatile psychic nature.[7] We have seen that this activity consists largely of personal-social reactions along unperceived tracks of pattern laid down from the Arūpa level functioning above or behind the focus of personal consciousness. The reason why the Arūpa level is beyond the ken of the consciousness is not because it is essentially different (as if it were, *e.g.*, a passive network) but because the personality does focus, from evolution and habit, upon the aforesaid versatile activity. The stilling of this activity and the coming to rest of this focus, though difficult and requiring prolonged training, is by reliable accounts from widely diverse sources, both eastern and western, a tremendous expansion, brightening and clarifying of consciousness, in which the intellect functions with undreamed-of rapidity and sureness. The scientific study of languages and linguistic principles is at least a partial raising of the intellect toward this level. In the understanding of a large linguistic pattern there is involved a partial shift of focus away from the versatile psychic activity. Such understandings have even a therapeutic value. Many neuroses are simply the compulsive working over and over of word systems, from which the patient can be freed by showing him the process and pattern.

All this leads back to the idea touched upon in Part I of this essay, that the types of patterned relationship found in language may be but the wavering and distorted, pale, substanceless reflection of a *causal world*. Just as language consists of discrete lexation-segmentation (*Nāma-Rūpa*) and ordered patternment, of which the latter has the more background character, less obvious but more infrangible and universal, so the physical world may be an aggregate of quasi-discrete entities (atoms, crystals, living organisms, planets, stars, etc.) not fully understandable as such, but rather emergent from a field of causes that is itself a manifold of pattern and order. It is upon the bars of the fence, beyond which it would meet these *characters of the field*, that science is now poised. As physics explores into the intra-atomic phenomena, the discrete physical forms and forces are more and more dissolved into relations of pure patternment. The *place* of an apparent entity, an electron for example, becomes indefinite, interrupted; the entity appears and disappears from one structural position to another structural position, like a phoneme or any other patterned linguistic entity, and may be said to be *nowhere* in between the positions. Its locus, first thought of and analyzed as a continuous variable, becomes on closer scrutiny a mere alternation;

[7] Bragdon's paraphrase of the Yoga Sūtras, *An Introduction to Yoga*, Claude Bragdon, New York, 1933.

situations "actualize" it, structure beyond the probe of the measuring rod governs it; three-dimensional shape there is none, instead—"Arūpa."

SCIENCE cannot yet understand the transcendental logic of such a state of affairs, for it has not yet freed itself from the illusory necessities of common logic which are only at bottom necessities of grammatical pattern in western Aryan grammar; necessities for substances which are only necessities for substantives in certain sentence positions, necessities for forces, attractions, etc. which are only necessities for verbs in certain other positions, and so on. Science, if it survives the impending darkness, will next take up the consideration of linguistic principles and divest itself of these illusory linguistic necessities, too long held to be the substance of Reason itself.

Now, the mental antipathies of men, like the fears of men, are very elemental, widespread, and momentous mental phenomena. But they are also in their fundamental nature extremely capricious, and extremely suggestible mental phenomena. Let an individual man alone, and he will feel antipathies for certain other human beings very much as any young child does — namely, quite capriciously — just as he will also feel all sorts of capricious likings for people. But train a man first to give names to his antipathies, then to regard the antipathies thus named as sacred merely because they have a name, and then you get the phenomena of racial hatred, of religious hatred, of class hatred, and so on indefinitely. Such trained hatreds are peculiarly pathetic and peculiarly deceitful, because they combine in such a subtle way the elemental vehemence of the hatred that a child may feel for a stranger, a cat for a dog, with the appearance of dignity and solemnity and even of duty which a name gives. Such antipathies will always play their part in human history. But what we do about them is to try not to be fooled by them, not to take them too seriously because of their mere name. We can remember that they are a childish phenomena in our lives, phenomena on a level with a dread of snakes, or of mice; phenomena that we share with the cats and with the dogs, not noble phenomena, but caprices of our complex nature. JOSIAH ROYCE.

BIBLIOGRAPHY OF THE WRITINGS OF BENJAMIN LEE WHORF

HERBERT HACKETT *

BENJAMIN LEE WHORF, whose untimely death in 1941 was a serious blow to linguistics, anthropology, and general semantics, was born in 1897. At the time of his death, he was an official of the Hartford Fire Insurance Company, having joined that firm in 1919. His skill in deciphering Aztec inscriptions brought him, in 1928, to the attention of the scientific world. His studies of American Indian culture and thought, begun as a hobby with the study of the Mayan and Aztec languages, eventually carried him on several expeditions to central Mexico and the American Southwest. The Hopi dictionary on which he was working when he died remains unpublished. In spite of the fact that Whorf's writings appeared in many scattered places and were never collected in book form, they have been profoundly influential.

I have no doubt that other Whorf items will crop up from time to time in the future. If any reader happens to know of any that I have omitted, I should be grateful to hear of them. Meanwhile, I am indebted to Dr. George L. Trager of the Foreign Service Institute, Washington, D. C., and to Professor Clyde Kluckhohn of Harvard University for having called to my attention items that I should otherwise have missed.

"An Aztec Account of the Toltec Decline," *Proceedings of the 23rd Congress of Americanists*, New York, 1928, pp. 122-9.

"Aztec Linguistics," International Congress of Americanists, New York, 1928, Abstracts of Papers, No. 116.

"The Reign of Huemac," *American Anthropologist*, 31. 667-84 (1929).

"A Central Mexican Inscription Combining Mexican and Maya Day Signs," *American Anthropologist*, 34. 296-302 (1932).

The Phonetic Value of Certain Characters in Maya Writing. Cambridge, Mass.: Harvard University Press, 1933 (Papers of the Peabody Museum).

Review of A. L. Kroeber, *Uto-Aztecan Languages of Mexico*, *American Anthropologist*, 37. 343-5 (1935).

* Department of Written and Spoken English, The Basic College, Michigan State College, East Lansing, Michigan.

"The Comparative Linguistics of Uto-Aztecan," *American Anthropologist,* 37. 600-8 (1935).

"Maya Writing and Its Decipherment," *Maya Research,* 2. 367-82 (1935).

Appendix to J. Alden Mason, "Classification of the Sonoran Languages," in Robert H. Lowie (ed.), *Essays in Anthropology* (Berkeley: University of California Press, 1936), pp. 197-8.

Notes on the "Glossary," in Elsie Clews Parsons, *Hopi Journal of Alexander M. Stephens,* Part 2. Columbia Contributions to Anthropology, vol. 23 (New York: Columbia University Press, 1936), pp. 1198-1326.

"The Punctual and Segmentative Aspects of Verbs in Hopi," *Language,* 12. 127-31 (1936).

"Notes on the Tübatulabal Language," *American Anthropologist,* 38. 341-4 (1936).

"The Origin of Aztec TL," *American Anthropologist,* 39. 265-74 (1937).

[With George L. Trager] "The Relationship of Uto-Aztecan and Tanoan," *American Anthropologist,* 39. 609-24 (1937).

Hopi Dictionary. Unpublished manuscript (1937) in the possession of Clyde Kluckhohn, Harvard University, Cambridge, Mass.

"Some Verbal Categories of Hopi," *Language,* 14. 275-86 (1938).

"Science and Linguistics," *Technology Review,* 44. 229-31, 247-8 (1940); reprinted in S. I. Hayakawa, *Language in Action* (New York: Harcourt-Brace, 1941), pp. 302-21; reprinted in T. Newcomb and E. Hartley, *Readings in Social Psychology* (New York: Henry Holt, 1947), pp. 210-18; reprinted in B. L. Whorf, *Four Articles on Metalinguistics* (Washington: Foreign Service Institute, 1950), pp. 1-7.

"Gestalt Techniques of Stem Composition in Shawnee," appendix to C. F. Voegelin, *Shawnee Stems and the James P. Dunn Miami Dictionary* (Indianapolis: Indiana Historical Society, 1940), pp. 390-406.

"Linguistics as an Exact Science," *Technology Review,* 43. 61-3, 80-3 (1940); reprinted in B. L. Whorf, *Four Articles on Metalinguistics* (Washington: Foreign Service Institute, 1950), pp. 9-16.

"Notes on Two Recent Findings from Central Mexico," unpublished manuscript 7 pp., 1940, in the Library of Peabody Museum, Harvard University, Cambridge, Mass.

"The Relation of Habitual Thought and Behavior to Language," in Leslie Spier (ed.) *Language, Culture and Personality.* (Menasha, Wis.: Sapir Memorial Publication Fund, 1941), pp. 75-93; reprinted in *ETC.,* 1. 197-215 (1944); reprinted in B. L. Whorf, *Four Articles on Metalinguistics* (Washington: Foreign Service Institute, 1950), pp. 25-45.

"Languages and Logic," *Technology Review,* 43. 250-2, 266, 268, 272 (1941); reprinted in B. L. Whorf, *Four Articles on Metalinguistics* (Washington: Foreign Service Institute, 1950), pp. 17-23.

"Decipherment of the Linguistic Portion of the Maya Hieroglyphs," in *Smithsonian Annual Report, 1941,* Publication 3669 (Washington: Smithsonian Institute, 1942), pp. 479-502.

"Language, Mind and Reality," *The Theosophist* (Madras, India) Part I, 63. 281-91 (January 1942); Part II, 63. 25-37 (April 1942). [In spite of the apparent illogic of the pagination, these numbers are correct as given.] Reprinted in *ETC.*, 9. 167-188 (Spring 1952).

"Phonemic Analysis of the English of Eastern Massachusetts," *Studies in Linguistics,* 2. 21-40 (1943).

"Loan Words in Ancient Mexico," *Philological and Documentary Studies,* 1. 1-17 (1943) (Middle American Research Institute, Tulane University, New Orleans); reprinted in *Studies in Linguistics,* 5. 49-64 (1947).

"Grammatical Categories," *Language,* 21. 1-11 (1945).

"The Hopi Language, Toreva Dialect," in Henry Hoijer (ed.), *Linguistic Structures of Native America* (New York: Viking Fund, 1946), pp. 158-83.

"The Milpa Alta Dialect of Aztec," in Henry Hoijer (ed.), *Linguistic Structures of Native America* (New York: Viking Fund, 1946), pp. 367-97.

Four Articles on Metalinguistics. Washington: Foreign Service Institute, 1950. [Contains "Science and Linguistics," "Linguistics as an Exact Science," "Languages and Logic," and "The Relation of Habitual Thought and Behavior to Language," in that order.]

"An American Indian Model of the Universe," *International Journal of American Linguistics,* 16. 67-72 (1950); reprinted in *ETC.*, 8. 27-33 (1950).

STUDIES IN LANGUAGE AND CULTURE IN THE TRAINING OF FOREIGN SERVICE PERSONNEL: *The School of Languages and Linguistics of the United States Department of State*

WILLIAM G. LEARY *

ON EVERY HAND today we hear of educators, social scientists, religious groups, communication organizations, and others who are actively interested in better, more cooperative relations among men. At a time when the need for cooperation on the international level has reached crisis proportions, it is encouraging to note that one agency of the U.S. government, the School of Languages and Linguistics of the Foreign Service Institute, is assuming a pioneering role in instituting a kind of training that can mean a great deal to the improvement of international relations. Any description of this role must be preceded, however, by a brief account of the origin, history, and present organization of the Foreign Service Institute, a new and as yet relatively little known arm of the Department of State.[1]

DURING World War II it became apparent to many U.S. policy makers that the new responsibilities the United States would be required to shoulder hereafter in world affairs called for special competencies on the part of foreign service officers. Specifically, this meant a more exacting recruiting policy, an improved education program, and an active in-service training program. Leading experts in foreign relations were consulted. Dewitt C. Poole, former Director of the School of Public and International Affairs at Princeton, drafted a report in 1945 entitled, "Some Preliminary Observations and Recommendations on Foreign Service Training." This was followed by a memo prepared by the Division

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[1] I have based this account on information contained in the following publications: Department of State Publication 3351, *The Foreign Service Institute: Catalog and General Information,* Department and Foreign Service Series 4 (Washington: Government Printing Office, 1949); Frank Snowden Hopkins, "Training Responsibilities in the Department of State," *Public Administration Review,* VIII (Spring 1948) 119-25; Hopkins, "Career Classroom," *New York Times Magazine,* December 5, 1948, pp. 32-3.

of Foreign Service Planning, "Tentative Plans for a Foreign Service Institute." These preliminary suggestions provided the basis for discussions between representatives of the State Department and a committee of the Council on Foreign Relations specially appointed to advise them. As a result of these discussions the State Department established in April, 1945, a Division of Training Services which evolved a pattern later inherited by the Foreign Service Institute. Authorization by Congress for the Institute itself was forthcoming in Title VII of the Foreign Service Act of July, 1946. The act was signed by President Truman on August 13, 1946, and the Institute was formally established by Secretary of State Marshall on March 13, 1947.

By legislative charter the Institute has a training responsibility jointly to the Department of State and the Foreign Service. In addition to training both officers and employees of these two organizations, it admits to its schools employees from other government agencies who require training in foreign affairs. The Institute does not admit persons who are not employed by the government. Under the direction of Norman Burns, the Institute operates four schools, each headed by an assistant director.[2] Two of these schools, the School of Advanced and Specialized Studies, under the direction of Frank S. Hopkins, and the School of Languages and Linguistics, under the direction of Dr. Henry Lee Smith, Jr., are of particular interest to students of inter-group relations.[3]

The School of Advanced and Specialized Studies is designed to train—and in a very real sense to re-train—experienced Foreign Service personnel. These officers are given intensive graduate-level training by means of classes, seminars, and tutorial discussions in the Institute's own school building in Washington; they may also receive on-the-job training, be detailed to certain universities for special course work, or receive training at foreign service posts abroad.

Their course of study represents a significant shift away from the thinking of foreign service personnel and educators of a decade or more ago. As Mr. Hopkins points out, in the past the academic training had been too heavily weighted with courses in international law, diplomatic history, comparative government, and political and economic theory. All these tended to assume a more stable world than we now have. By contrast, today's Foreign Service officer

[2] Mr. Burns is the present Director of the Institute. The first Director was Dr. William P. Maddox, well-known scholar in the field of international relations, later Counsellor of Embassy at Lisbon. The second Director was Harry C. Hawkins, who has had a distinguished career in the State Department, the Foreign Service, and the Fletcher School of Law and Diplomacy.

[3] Professor Graham Stuart, of the Stanford University Department of Political Science and a member of the Advisory Committee of the Institute, informed me that Mr. Hopkins has recently severed his connection with the Institute. The present head of the School of Advanced and Specialized Studies is Dr. Edward A. Kennard, a member of the Institute staff since 1947. It is Mr. Hopkins, however, who has most actively publicized the work of the Institute to date.

is being trained under a different set of assumptions.[4] The most significant are, first, that we must deal primarily with *people*—their ideas, sentiments, anxieties, resentments, frustrations, and their basic patterns of thinking, feeling, and behaving; secondly, that government decisions are made by people who are the end products of their interaction within their own social environment. In fine, the present program is one of intensive instruction in social science and the culture complex. We are not surprised, then, to discover that the curriculum of the School of Advanced and Specialized Studies includes such courses as "Cultural and Psychological Factors in International Relations," "Tutorial Instruction in Cultural Anthropology," "Seminars on Geographic Areas," "Propaganda Analysis," "Public Opinion Formation in Foreign Countries," and "Language-and-Area Studies," to name only some of the offerings.

Stuart Chase, who spent a day touring the classrooms of the Institute, reports that the total program appeared to comprise three main steps: first, a study of the culture complex (involving geography, sociology, anthropology, linguistics, social psychology, as well as economics and political science): second, special case studies of situations the State Department faces in each major area abroad; third, reports by each officer on what he has learned—a sort of pooling of experience. Chase concludes with characteristic enthusiasm, "If young men in the Foreign Offices of all nations could be prepared like this, future wars might never come. . . . Were I a young man again, I can think of no course I would rather take."[5] One does not necessarily need to share Mr. Chase's unquenchable optimism to be impressed by the thoughtfulness of the assumptions underlying this program.

AN INTEGRAL part of the training of the advanced officers' group is administered by the School of Languages and Linguistics. Viewed schematically, the Institute's schools may be said to be organized horizontally—with the School of Advanced and Specialized Studies at the upper level and the School of Diplomatic and Consular Practice at the lower level—and vertically, with the School of Languages and Linguistics cutting across both of the horizontal levels, offering instruction in foreign languages and linguistics in varying degrees of intensity to members of both the basic and advanced groups. It is with the program of the School of Languages and Linguistics that we are chiefly concerned here.

At the outset it should be emphasized that the primary objective of this school goes far beyond the customary one of teaching Foreign Service officers to speak and interpret foreign languages—especially as those activities are usually conceived. It is true, of course, that adequate control of the structure of the spoken language of a given people is the first objective. But it is by no means

[4] Frank S. Hopkins, "Career Classroom," *op. cit.*, p. 32.

[5] Stuart Chase, *Roads to Agreement* (New York, 1951), pp. 214-15.

the final—or, from the standpoint of international understanding, even the most important—objective. Rather, in the words of the Institute's catalog:

> The general objective of training for language-and-area specialization is that the Foreign Service officer should acquire a thorough understanding of foreign peoples and should develop effective ways of communicating with them in aiding the implementation of national policy. *Language is considered not as a mechanical tool but as a vital mode of communication with a people. Since language is an integral part of culture, the Institute's objective is to stress the language-and-culture unity and to develop insights on the part of the officer into the ways in which a foreign people thinks, feels, believes, and behaves—as well as talks and writes.*[6]

It is precisely here that the Institute's directors have shown boldness, imagination, and insight in cutting loose from pre-semantic concepts of the mechanical functioning of language and adopting instead the concept of language as a social instrument and determinant of behavior that students of semantics and general semantics have been urging for the past fifteen years or more.[7] That the direction this program is taking is likewise consistent with the constantly increasing trend of educational theory and practice toward a view of the social sciences as an integrated rather than atomized field of investigation is equally apparent.[8]

TO GRASP fully the implications of these two concepts—the semantic approach to language and the culture approach to understanding foreign peoples—as the directors of the Institute see them, let us listen for a moment to Frank Hopkins discussing the responsibilities which the Institute feels its trainees must be prepared to assume if they are to deal effectively with the people of a half a hundred cultures in the world today.

> These people [U.S. Foreign Service officers] must not only be able to translate what a Chinese or Arab *says* in his own language; they must know what he *means* when he says it. Nor is it enough to be able to reply to them in Chinese or Arabic; the reply must be made in such a way that it is reassuring and persuasive in terms of ideas and sentiments which are significant to the foreigner. . . . [This requires] intense and

[6] *The Foreign Service Institute: Catalog and General Information*, p. 7 (italics added).

[7] See Alfred Korzybski, *Science and Sanity*, (Lancaster, Pa.: Science Press, 1933); C. K. Ogden and I. A. Richards, *The Meaning of Meaning*, (New York: Harcourt, Brace, 1936); Wendell Johnson, *People in Quandaries* (New York: Harper, 1946); S. I. Hayakawa, *Language in Thought and Action* (New York: Harcourt, Brace, 1949); Anatol Rapoport, *Science and the Goals of Man* (New York: Harper, 1950).

[8] To list the vast number of books and articles documenting this statement would be a work of supererogation. Here, as elsewhere, Stuart Chase has admirably filled the need for an expert recorder of work in progress with his *The Proper Study of Mankind* (New York: Harper, 1948).

> intelligent study of languages and cultures and of the personality characteristics which each national or local culture produces.[9]

Just how does the Institute's School of Languages and Linguistics propose to accomplish these far-reaching and difficult objectives? A study of the training documents so far made available by the Language School reveals three avenues of approach, necessarily related to be sure, but possessing different and distinguishing emphases.[10] These might be termed the spoken-language approach, the linguistic-analysis approach, and the language-and-culture approach. Of these, the third approach appears the most significant for carrying out the primary objective of the school, but all of them deserve our attention.

THE FIRST approach may be said for all practical purposes to be identical with that developed during World War II by the linguistic scientists in the armed forces and those associated with the intensive language program of the American Council of Learned Societies. The method is one of intensive individual concentration on the control of a *spoken* language under the supervision of a linguistic scientist and working with a native speaker—called an informant. This technique is admirably outlined by Leonard Bloomfield in the monograph cited in footnote 10. It is sufficient to note here that this technique involves the devising by the student-learner of a system of phonetic transcription by means of which he records the *sounds* of the spoken language as he gets them first-hand from the informant, the constant study, revision, and correction of this phonetic record by the student with the aid of the linguistic scientist and/or the informant, and the consulting of grammars and texts (if any) only late in the training period when the student is already able to converse in the foreign

[9] Frank S. Hopkins, "Training Responsibilities in the Department of State," *op. cit.*, p. 122 (italics added).

[10] The training documents which the Foreign Service Institute made available to me are the following: Leonard Bloomfield, "Outline Guide for the Practical Study of Foreign Languages," *Special Publications of the Linguistic Society of America,* Baltimore, Md.: The Waverly Press, Inc., 1942; George L. Trager, "The Field of Linguistics," *Studies in Linguistics: Occasional Papers 1,* Norman, Oklahoma: Battenburg Press, 1950; George L. Trager and Henry Lee Smith, Jr., "An Outline of English Structure," *Studies in Linguistics: Occasional Papers 3,* Norman, Oklahoma: Battenberg Press, 1951; Henry Lee Smith, Jr. and Charles A. Ferguson, *Language and Culture,* lithoprinted syllabus, Department of State, Foreign Service Institute, 1951; Benjamin Lee Whorf, *Four Articles on Metalinguistics,* reprinted from *Technology Review* and from *Language, Culture, and Personality,* Washington, D. C.: Foreign Service Institute, Department of State, 1950; B. L. Whorf, "An American Indian Model of the Universe," posthumous article edited by E. A. Kennard and G. L. Trager, *International Journal of American Linguistics* XVI (April, 1950), 67-72. The last-named article appeared also in *ETC.*, VIII, 27-33 (December 1950), and Whorf's "Relation of Habitual Thought and Behavior to Language," one of the "Four Articles on Metalinguistics" referred to above, in *ETC.*, I, 97-215 (Summer 1944).

language with some facility. That this represents a radical departure from the methods of learning a foreign language employed nearly universally in our schools and universities is obvious. Bloomfield's indictment of these traditional methods of language instruction is damning. For our purposes, the most significant statement in Bloomfield's "Outline Guide" is his advice to remember always "that a language is what speakers do and not what someone thinks they ought to do." In carrying out this phase of its language training program, the Institute makes use of the basic course manuals developed by the army. Moreover, it is presently engaged in revising these materials and writing supplementary ones.[11]

THE SECOND approach—linguistic analysis—is the most specialized and, in one sense, the most academic. Here the intent is to supply the student officers with some grasp of both historical and descriptive linguistics, with the emphasis on the latter. Among the courses of instruction offered by the Institute's own language staff is "General Linguistics," described as a resumé of the latest developments in the theory, methods, and techniques of linguistic science. This course is recommended particularly for personnel working with non-Indo-European languages. Another course is entitled "Seminars in Linguistic Science," which, we are told, lays stress on the relationship of language to the totality of the institutions, customs, and beliefs of the culture of which it is a part.

Because the need is great, the staff of the language school small, and the field wide-ranging—some forty-six languages are now being taught—student officers are frequently assigned to various universities whose graduate schools are qualified to give such specialized training. But even here, it should be noted, the Institute does not lose sight of its primary objective. So we find Dr. William Maddox, the Institute's first Director, writing in 1947:

> The Institute also provided seminars in the cultural context of the Russian language, since Columbia's program does not include the approach to the understanding of the Slavic culture which the Institute's staff regards as vastly important for Foreign Service officers.[12]

The course referred to by Dr. Maddox is entitled "Tutorial Instruction in Linguistics," designed especially to provide an orientation in linguistics as a social science to those language-and-area specialists assigned to universities; but now, according to the Institute's catalog, "the major part of the instruction precedes the officer's enrollment at the university" and "conferences continue throughout the period of the university assignment."

[11] For a brief description of the present Army language training program, see W. F. Aggeler, "Army Language School: an Appraisal," *Modern Language Journal*, March, 1950, pp. 189-95.

[12] William P. Maddox, "Foreign Service Institute of the U.S. Department of State," *Higher Education*, IV (October 15, 1947), 37-40.

THE THIRD approach—which has here been termed the culture-and-language approach—is at once the newest, the most tentative, and the most difficult to describe. It is, in the thinking of Dr. Henry Lee Smith, Jr. and Dr. G. L. Trager, the men chiefly responsible for its development and direction, inseparably linked with the second approach—linguistic analysis. Hence, a somewhat more detailed description of the second approach seems necessary in order to establish a context in which the third approach may be better understood. Such an attempt must be accompanied, however, by the frank admission that this description is a vast oversimplification of the highly specialized science of linguistics. Our justification must be that to do otherwise would unnecessarily tax the patience of the reader (to say nothing of the understanding of the writer) and would entangle us in such a jungle of unfamiliar nomenclature and concepts as to blur from view the main ideas which appear to underlie the Institute's total program.

In brief, then, Smith and Trager and their associates visualize the overall field of linguistics as falling into three main categories which they term prelinguistics, microlinguistics, and metalinguistics.[13] *Prelinguistics* is concerned with the study of the physical and biological aspects of speaking and hearing. The linguist wishes to know what happens in terms of acoustics (physics) and articulation (biology—specifically, physiology) when a language is spoken and heard. The data concerning articulatory phonetics are at hand; those dealing with acoustic phonetics are being developed; data dependent on a physiology of the nerve centers of speech and hearing remain to be determined. *Microlinguistics* deals with the analysis of language systems. It is this aspect of the total field which is normally associated by the lay reader with the generic term linguistics. In baldest outline, microlinguistics includes descriptive linguistics (the phonology and grammar of specific languages), contrastive linguistics (including dialect geography, historical linguistics of stages of language separated in time, and the study of children's language), and the general linguistics of language as such. *Metalinguistics* constitutes the full statement of the point-by-point and pattern-by-pattern relations between the language and any other cultural systems (e.g., religion, law, technology) which make up a distinct culture group or society.[14] All of these areas are subdivisions of the whole field of language study which these scholars term *macrolinguistics*.

If the reader has not been intimidated by this professional jargon (the necessary shorthand of any systematic study), he will see that what has been inelegantly termed in this paper the linguistic-analysis approach is the Institute's microlinguistics. And what we have been calling the language-and-culture approach is the Institute's metalinguistics. If these distinctions are clear, we are

[13] I have depended here on the articles by Trager and Smith cited in footnote 10.

[14] See footnote 1, p. 163 of this issue.

ready now to proceed to a consideration of this third approach—metalinguistics —and its possible implications for international understanding.

THE CONCEPT of metalinguistics as *the study of the overall relation of the linguistic system to the other systems of the cultural totality* appears to rest at the present time largely on the provocative studies of the late Benjamin Lee Whorf.[15] Whorf's central thesis is that language is more than a systematic pattern for *expressing* ideas—it is, rather, *a means of shaping our ideas:* "a program and guide for the individual's mental activity, for his analysis of impressions, for the synthesis of his mental stock in trade." [16] A notion as startling as this needs to be restated many different times in many different ways. Whorf does just that.

He argues, for instance, that our deeply-rooted notion that language is merely an incidental process concerned strictly with communication, not with the formation of ideas, is naive. This notion, he says, is based on the assumption that there are universal laws of logic or reason supposed to be the same for all observers of the universe whether they speak Chinese or Choctaw. But, as a student of comparative linguistics, Whorf tells us he found this assumption invalid. Citing his studies of the Hopi Indian language, he argues that, even where the physical evidence is the same, different cultures may derive very different pictures of the universe because of the language pattern in which their ideas come to be formulated. Specifically, he found among the Hopi no words, grammatical forms, constructions or expressions with which to refer to what Western cultures know as time. Yet, he points out, Hopi is capable of accounting for and describing correctly, in a pragmatic or operational sense, all observable phenomena of the universe.[17] This absence of the Western time sense, built into our thought patterns by the words we learn, might, ironically, stand one in good stead as he attempts to grapple with the relativity principle of twentieth-century physics. So, Whorf concludes:

> Formulation of ideas is not an independent process, strictly rational in the old sense, but is part of a particular grammar and differs, from slightly to greatly, as between different grammars. We dissect nature along lines laid down by different grammars. . . . The categories and types we

[15] For a list of the articles by Whorf in which this concept is adumbrated, see footnote 10. In one of these articles Whorf acknowledges a debt to Edward Sapir, whose *Language* (New York: Harcourt, Brace, 1921) contains in Chapter 6 some germinal ideas which have influenced contemporary semanticists as well as linguists.

[16] Whorf, "Four Articles on Metalinguistics," *op. cit.*, p. 5. For a fascinating account of language behavior among the Trobriand Islanders, which does much to buttress Whorf's thesis, see Dorothy Lee, "Lineal and Nonlineal Codifications of Reality," *ETC.* 8.13-26 December 1950).

[17] Whorf, "An American Indian Model of the Universe," *ETC.*, VIII, 27-33 (December 1950).

> isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscopic flux of impressions which has to be organized by our minds—and this means largely by the linguistic systems in our minds. We cut nature up, organize it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it this way—an agreement that holds throughout our speech community and is codified in the patterns of our language.[18]

This idea is further developed in a series of shrewd observations concerning the English language. Whorf cites our practice of dividing most of our English words into two classes—nouns and verbs—each with different grammatical and —watch out—logical properties. Our language, he points out, thus gives us a bi-polar division of nature. But nature herself is not thus polarized.

> If it be said that strike, turn, run, are verbs because they denote temporary or short-lasting, events, i.e., actions, . . . why are lightning, spark, wave, eddy . . . nouns? They are temporary events. If man and horse are nouns because they are long-lasting and stable events, i.e., things, what then are keep, adhere, extend, project, continue . . . doing among the verbs? [19]

In the Hopi language, on the other hand, lightning, wave, flame, etc., are verbs. Whorf thinks it a humbling experience to discover that a few relatively recent dialects of the Indo-European language family and the rationalizing techniques elaborated therefrom are not necessarily the apex of the evolution of the human mind.

SMITH and Ferguson, in their syllabus previously alluded to (see footnote 10), develop this point clearly and convincingly. They reveal the ethnocentric impulse behind such popular notions as the one that primitive peoples have "primitive languages." "Every language," they state, "is adequate as a means of inter-action and co-operation for the people of that culture. There is no known universal yardstick to measure the absolute value of a language." [20] If, then, we are inclined to smile at the "simple" Hopi who makes one noun represent every thing or being that flies (including insect, airplane, aviator) with the exception of birds, we need only to be reminded of how we use the word snow to stand for falling snow, snow on the ground, snow packed hard like ice, slushy snow, wind-driven, falling snow—a verbal device unthinkable to an Eskimo.[21] As Smith and Ferguson remind us, "English may be 'better' than Dinka, a language

[18] Whorf, *Four Articles on Metalinguistics,*" p. 5. See also in this connection, S. I. Hayakawa, "What is Meant by Aristotelian Structure of Language," *ETC.,* V, 225-230 (Summer 1948).

[19] Whorf, *ibid.,* p. 6.

[20] Henry Lee Smith, Jr. and Charles A. Ferguson, *Language and Culture,* p. 2.

[21] Whorf, "Four Articles on Metalinguistics," p. 6.

spoken in the Sudan, for talking about automobile repairs, but Dinka is 'better' than English for talking about cattle." [22]

The Smith-Ferguson syllabus is useful, too, for its listing, under the heading "Metalinguistics," of a few common failings peculiar to a "lineal language" (one which is based on the actor-action-goal, or subject-verb-object sentence) like English. Among these is our tendency to analyze events and situations in causal terms even when such analysis is not applicable. Closely related is the ease with which our language structure leads us into the *post hoc ergo propter hoc* fallacy. Still another is the tendency—one which the semanticist has also been trying to make us wary of—to assume, because the vast majority of subjects, objects, and complements in the actor-action-goal sentence refer to living beings and concrete objects and places, that they *always* do—even when we substitute abstractions for those concrete terms. Too many of us continue to react to high-level abstractions like *democracy* and *Asia* as though they were entities independent of the complexities they sum up.

Perhaps the most important weakness in the language structure of English (and the whole Indo-European language family) from the viewpoint of one interested primarily in attaining agreement is its tendency to lead us to classify things into opposites with no middle ground. This is the "either . . . or" thinking which semanticists term two-valued. This tendency is further strengthened among English-speaking peoples because the highly moral orientation of our culture tends to give moral overtones to dichotomies which are fundamentally non-moral. Witness our assigning moral tones of good and bad to pairs like clean vs. dirty, work vs. leisure, or practical vs. theoretical. The Chinese language, Smith and Ferguson note, does not picture life in mutually exclusive terms of black and white but as a sort of gray. "*Hau* generally translated as 'good' . . . and *bu hau* 'not good,' . . . could *both* be translated more accurately as 'Considering everything, things could be a little worse—or a little better.' " [23]

EVEN THIS limited sketch of the Foreign Service Institute's language training program is sufficient, perhaps, to indicate something of the direction it is taking and something of the thinking of the men who are preparing our Foreign Service officers to cope with unprecedented problems. It is much too early, of course, to draw any conclusions as to the probable results of such a program, or to assess in any final way its merits. But a few tentative observations may not be amiss.

Certainly one comes away from a reading of the Institute's training documents impressed by the boldness and vigor of the men who are directing the training program. If one is skeptical of the Whorf thesis as too theoretical and

[22] Smith and Ferguson, *op. cit.*, p. 2.

[23] Smith and Ferguson, *op. cit.*, p. 5.

without adequate empirical verification, he may find reassurance in Trager and Smith's cool-headed appraisal of it:

> Of course it would be much too facile a conclusion that a certain kind of linguistic system "makes" a society go in for science, or for belief in certain myths, or for one analysis of physical phenomena as against another. We merely suggest that certain linguistic structures and certain other cultural structures may reinforce and strengthen each other in ways worthy of investigation. Here again the matter of levels must be emphasized: we had better be pretty sure of our ground in microlinguistic analysis and the parts of metalinguistics alluded to . . . as well as in the ethnological material under consideration, before trying to do this kind of work.[24]

I do not think it querulous to add that I should like to see more evidence in this curriculum of a systematic study of the growing body of the literature of general semantics. A recent letter from Dr. Smith states: "In our approach to the tie-up between linguistic systems and other cultural systems we have used, as you note, the term 'metalinguistics.' This is not equivalent to general semantics but large phases of the activity of the general semanticist would be included within metalinguistics, as we use the term." [25] Still, I miss the work of Korzybski, Hayakawa, Walpole, Rapoport, Johnson, Lee and others from the reading lists. It may be that these and others are represented on lists not available to me. I should like to think so, for surely they would form a body of materials consonant with both the ends and the means of the Institute's program.

IT SHOULD BE noted in conclusion that proponents of an international language will hardly take heart from the program outlined here. But is not the proposal of an international language, logically so attractive, psychologically unsound? Language is demonstrably a function of culture, and we have no world culture as yet. Is it not more realistic, more consistent with all that the combined studies of the social sciences lead us to infer, to hold rather to the concept of cultural pluralism, of a variety of languages together with a variety of other culture-systems operating within a framework of unity based on consent to those few values—shared information, shared respect, shared decision-making—which we have reason to believe peoples of all cultures desire?

[24] Trager and Smith, "An Outline of English Structure," p. 87.

[25] Henry Lee Smith, Jr., in a letter to Mr. John Caffrey, July 17, 1951.

A CHINESE PHILOSOPHER'S THEORY OF KNOWLEDGE*

CHANG TUNG-SUN 張東蓀

I

IN THIS ESSAY an attempt will be made to deal with theoretical knowledge in a more or less comprehensive way. It is an attempt at a theory of knowledge. For quite a number of years, the writer has had in mind the idea of elaborating more satisfactorily a hint given him in the discovery that Western philosophical problems are not exactly similar to those which were in the minds of Chinese philosophers. There seems to be some difference between the Western and Chinese intellectual processes. With this in mind, it is desirable to have our view of the Western theory of knowledge somewhat clarified. For the Western theory of knowledge has taken knowledge as the *universal* knowledge of mankind. As a matter of fact, however, it is only one kind of knowledge, other kinds being present in other cultures. Support for the view that knowledge can be studied sociologically or culturally came recently in Karl Mannheim's *Ideology and Utopia: An Introduction to the Sociology of Knowledge*. Nevertheless, there are points of difference between Mannheim and the present writer.

The sociology of knowledge, historically, has merged with Marxism. But the Marxian interpretation of society is different from the point of view to be elaborated here in that it laid its emphasis on the antagonism of economic classes. Its sociology of knowledge is, therefore, characterized by class interests.

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The Editors are deeply indebted to Mr. T. H. Tsien, Librarian of the Far Eastern Library of the University of Chicago, for the following information about Professor Chang Tung-sun:

"Born in 1884; studied in Japan; chief editor of the Shanghai *Times* and many periodicals; acting president of China College, Shanghai; a student of Western philosophy, especially of Bergson; author of many Chinese works on Western philosophy, and translator of Plato and Bergson; professor of philosophy in Yenching University; a leader of the Chinese Democratic League and a member of the Central Committee of the Chinese People's Government since 1949."

In other words, it is nothing but an attempt to give knowledge its background in class struggles. This theory of knowledge cannot be properly called a sociological theory of knowledge but rather a class interpretation of knowledge. It is evident that the influence of social relations upon thought will not be adequately accounted for merely in terms of economic interests. Mannheim's merit lies in the fact that he has transcended this limit. Still there is much to be desired in his work, because it has been entirely in the field of concrete thought, or the prevalent thought of a given time, such as particular "isms" and theories. It is legitimate, of course, to analyze the social relations underlying such thought, but we must realize that in concrete social thought, there are also categories employed, and these categories themselves can also be analyzed from the sociological point of view. The attempt of this essay is primarily concerned with the latter, that is, the categories used in social thought. In other words, our interest here lies more in the structures underlying thought than in concrete thought as such.

BY THE NATURE of the problem our approach should be similar to that of Kant. The Kantian type of interest in knowledge is concerned with the fundamental conditions of knowledge, and to this extent the Kantian theory of knowledge seems to be acceptable, for a theory of knowledge should be a study of the forms of knowledge without touching upon its contents. But a sociological theory of knowledge will inevitably go beyond Kant, for Kant himself thought that he was treating the universal categories employed in the thinking process of all mankind, while as a matter of fact he has treated the forms of thought characteristic only of Western culture. Yet it is not to be taken to mean that it is not possible to have universal categories applying to human thought in general, or that only ethnically and culturally determined forms of thought are possible. Universal categories for human thought may be recognized, but not those defined by Kant. The Kantian theory of knowledge is within the limits of the Western type of knowledge; he attempted to establish a foundation for the great tradition of the West. He himself, of course, was influenced by his time and the culture of the Western tradition. He attempted to use the problem of knowledge to make a new approach to metaphysics in order to revive it. In his view, should he succeed in establishing the non-empirical aspect of human *understanding,* his metaphysics, as a prelude to the philosophy of life, would be on solid ground. Our problem today does not seem to be parallel with his.

We are in need of a theory of knowledge, but its use is not for the support of metaphysics. Our attitude, therefore, is different from that of Kant. It is nearer to that of Spengler. Following the latter, we may attribute the genesis and differences of the categories of thought to cultural differences. A given culture must have a given set of categories. This does not mean that a given culture is derived from a given set of categories, or that a given set of categories gives birth to a given culture. It means that the establishment of culture and categories

is one and the same thing. The formation of a given culture lies in the use of a given set of categories, but the relation between them is not in terms of cause and effect. They are two aspects of the same entity.

Being a philosopher and not a student of cultural anthropology or any other social science, the writer's treatment of knowledge from the cultural point of view may not necessarily be in agreement with that of the cultural and social scientists. The point of view expounded here arises from the findings of the history of philosophy. It is for the social scientist to revise or modify this contribution if necessary.

TO RECAPITULATE thus far: firstly, a theory of knowledge and cultural history must be treated simultaneously; secondly, not only does concrete social thought have its social background but logical forms and theoretical categories also have their cultural determinants; thirdly, the difference between Western and Eastern thought can be explained from this point of view; fourthly, from this we may understand that Western philosophy is nothing but a particular form of knowledge characteristic of and for the use of Western culture. All these points will be further elaborated in the following pages in which an attempt will be made to establish a new theory of knowledge.

II

BEFORE proceeding further, it is well to distinguish the various types of knowledge. Generally speaking, there are two kinds of knowledge, the perceptual and the conceptual. Take a table or a chair for instance. It can be touched and perceived directly. This is perceptual knowledge. The uniformity of nature and the idea of a Supreme Being, on the other hand, cannot be verified by the senses, and causality, teleology, and the like are also conceptual in nature. It may be noted that perceptual knowledge cannot be outside the conceptual, nor can conceptual knowledge be separated from the perceptual. As a matter of fact, any conceptual knowledge contains perceptual elements and vice versa. The differentiation between the two is always for the mere convenience of discussion. They do not exist separately.

The kind of knowledge treated in this essay, it will be seen, is not perceptual but conceptual knowledge. In so far as the conceptual guides the perceptual, the importance of the former surpasses that of the latter. This point is often neglected by the empiricists, but from the standpoint of cultural history it is desirable to have it emphasized.

Conceptual knowledge is also interpretative in nature. By interpretation we understand the manipulation of concepts and the employment of categories. For instance the apprehension of a flower is a perception, but it is an interpretation to say that flowers are derived from leaves, or that the formation of the

flower is for the purpose of reproduction. In an interpretation of this kind at least the following concepts are being used: any event must have its antecedent; each change must have its cause; and, the final result in a concept of evolution is so much the more derived from interpretation. Therefore, interpretative knowledge, because it contains concepts and results in concepts, is conceptual knowledge.[1] The manipulation of concepts is for the purpose of interpreting perceived facts. Thus, it is evident that conceptual knowledge is interpretative knowledge, and interpretative knowledge is theoretical knowledge.

AT THIS POINT we may mention the thesis of Pareto,[2] the Italian sociologist, for purposes of comparison. According to him, theoretical knowledge has very mixed elements: descriptive elements, axiomatic elements, concrete elements, and imaginary elements, in addition to those appealing to sentiments and beliefs. He also classifies theoretical knowledge into two kinds: the experimental and the non-experimental. And, with these two as *matter* he has as *nexus* the logical and the non-logical. Thus there are four classes, the logico-experimental, the non-logico-experimental, the logico-non-experimental, and the non-logico-non-experimental. In this connection we are not interested in developing his theory, but merely in pointing out that his experimental knowledge is outside the theoretical knowledge discussed herewith.

His distinction between the logical and the non-logical indicates that the non-logical is not very important, but the term "the logical" itself seems very ambiguous. The thought of man may not necessarily be in agreement with formal logic, but it cannot be otherwise than in agreement with *a* logic. We are treating, therefore, not formal logic but real logic. The type of logic used by Chinese philosophers is different from that of the West, while the Hindus may have a logic different from both the Chinese and the Western. Logic follows the trend of culture. Western scholars often mistake their logic for the universal logic of mankind, as we have seen in the case of Kant. We will have more to say on this point later. It suffices here to say that the distinction between the logical and the non-logical is of no particular importance, because there is no theoretical knowledge which does not imply real logic. It sounds like nonsense to speak of non-logical theoretical knowledge. Pareto has made a real point in saying that approval and disapproval of non-experimental knowledge depends upon sentiment, and thereby speaks of the "logic of sentiment." But from the logic of sentiment we must exclude experimental knowledge before we can go any further. What we are interested in here is a kind of knowledge which is both interpretative and conceptual and outside the experimental.

[1] [Compare Charles Morris's discussion of "post-language signs" in his "Comments on Mysticism and Its Language," *ETC.*, 9.3-8, Autumn, 1951. ED.]

[2] Vilfredo Pareto, *The Mind and Society*, tr. Andrew Bongiorno and Arthur Livingston (New York 1935), I, 8ff.

THE NEWLY ARISEN Vienna school has noted this point. Carnap, for example, has made a distinction between the problems of facts and the problems of logic.[3] The former are those arising from facts while the latter are problems of words symbolizing things, and of the judgments which are made about things. This distinction may be of use by bringing before us the fact that much of our knowledge is not directly related to things, but merely to views about things. This kind of knowledge has a great place in human life. In our discussion we are dealing with this kind of knowledge which in concrete cases is comprised of political thought, social thought, philosophical thought, and moral points of view, as well as the theoretical part of religious beliefs. Scientific knowledge, apart from its experimental elements, belongs here also in the form of interpretative theory.

It is worthwhile to note that experimental knowledge is guided by conceptual knowledge. Whitehead is very clear on this point.[4] According to him, science is a synthesis of two kinds of knowledge, one direct observation, the other interpretation. Thus he speaks of "observational order" and "conceptual order." The former is explained as well as supplemented by the latter. Points of view among scholars may differ as to the priority of the two, but since the emergence of higher animal forms, both of them have co-existed. New observations may modify original concepts while new concepts may lead to new points of observation. We may take the evolution of physics as an example. Newtonian physics starts with matter in the form of concrete things. Hence the conceptions of absolute motion, and absolute space and time. But modern physics takes cognizance of concrete matter only as a point in the framework of time and space. Hence, what Whitehead calls "simple location" is discarded. From this it may be seen that the development of physics follows the conceptual scheme which is employed in it. In addition to Whitehead, V. F. Lenzen, the American physicst, in his *The Nature of Physical Theory* has illustrated the changes and developments of physical concepts in relation to physics. In the field of biology, Woodger in his recent book, *The Axiomatic Method in Biology,* has also demonstrated very clearly that categories have guided observation. All these examples show that experimental knowledge is perceptually derived knowledge which is guided and influenced by underlying non-experimental knowledge or conceptual knowledge. It is easy to see that experimental knowledge can modify conceptual knowledge, while it is not so obvious to many people that conceptual knowledge may be underlying and guiding the perceptual knowledge.

ANOTHER POINT to be made concerns the social nature of conceptual knowledge. All experimental knowledge is derived from the senses, and thus is individual and private, in other words, non-social. Consequently, per-

[3] Rudolf Carnap, *The Logical Syntax of Language* (London 1937), 277.

[4] Alfred North Whitehead, *Adventures in Ideas* (New York 1933), ch. 9.

ceptual knowledge can hardly be social knowledge. Yet no knowledge can do away with its social content, the emergence and existence of which occur only in the field of interpretative knowledge. S. Alexander[5] has pointed out that the problem of valuation has a social nature, and that without presupposing society we cannot speak of value. It is needless to say that valuation is possible only in the field of interpretative knowledge. So far as perceptual knowledge is concerned, by the nature of the fact that it is private and individual, there is no problem of objective valuation. The importance of perceptual knowledge is self-evident, while non-experimental knowledge is apparently unimportant because its importance is not so evident, though nevertheless real.

III

THE REASON for the social nature of theoretical knowledge is not far to seek; it is that it is thinking expressed in terms of language, which in scientific terminology is called "linguistic thinking." It is needless to say that language is a social product. Although the child's language has a stage of monologue, it is self-evident that language implies or presupposes an audience. Primitive man, we are told, often takes language as a concrete entity. The lower the culture, the greater the power of words. In primitive society language has magical power, therefore there is a direct connection between language and thought. If a primitive man is accused of being a thief, he most certainly becomes angry. But in modern society a sophisticated person can turn aside this accusation by a smile, provided he is innocent. We may take the degree of the power of words as a gauge to measure the development of an ethnic intellectual development. This point has been sufficiently demonstrated by modern students of child psychology and "primitive mentality," so we do not need to dwell upon it any further.

The arguments thus far seem to reveal the discrepancy between language and things, and thus to advocate the emancipation of thought from language. Almost all the philosophers, from remote times to our own, have been aware of the limitations imposed by language, with the implication that real thinking cannot be clothed in language. The ordinary view is something like this: thought is primary, and with new terms thought has a better chance for expression. But this argument does not necessarily reveal the nature of the development of human thought. As a matter of fact, it is better to say that language has been a contributing factor rather than an obstacle to the development of thought. Viewing human history as a whole, any new creation in language, e.g., new terminology, represents a development of thought along a new line. Language and thought are fundamentally indivisible. Any thought can only be articulated through language or symbol. That which cannot be thus articulated most likely will not be counted as thought. Although language and thought cannot be

[5] Samuel Alexander, *Space, Time and Deity* (London 1920).

absolutely identified, they cannot be separated. It is not that language limits thought or hinders it, but rather that language creates thought and develops it. Should we consider the two points together, namely, that thought develops with language and that language is a form of social behavior, it will be clear that apart from the experimental elements all knowledge is social.

WITH THE COGNIZANCE of the determination of thought by social conditions, there develops the sociology of knowledge. But the sociology of knowledge has shown only that human thought is determined by a socially visible or invisible forces without realizing that apart from all these immediate concrete forces there are underlying social forces of a remote nature. We may identify these remote forces with cultural relations. All thought, in addition to being influenced by our immediate social environment, is also moulded by our remote cultural heritage. The immediate forces determine the trend of our thought, while the remote cultural heritage determines the forms in which thought is made possible. All these forces help to determine interpretative knowledge. With different interpretations come different cultures. And, being born into different cultures people learn to interpret differently. Thus we may use culture to explain categories, and categories to explain mental differences, e. g. those between the West and the East.

IV

WITH REGARD TO types of language, a distinction may be observed between "emotive language" and "referential language." The first is used to arouse, with necessary gestures and appropriate sounds, the corresponding gestures or mental attitudes in the person to whom they are addressed. The latter is used to refer to things and ideas about things, largely in terms of organized symbols or articulate language. According to Darwin, the animal expressions in the form of singing and roaring may be taken as the precursors of human language. Thus emotive language is nearer to elemental expressions and more concerned with mental attitudes while referential language, being nearer to abstract thinking, is more concerned with grammatical constructions than mere changes in sounds.

With grammar and sentence-structure comes logic, and in this connection we have to deal for a moment with the nature of logic. Western logicians take it for granted that the object of logic is rules of human reasoning. This assumption, however, is not quite justified. Take aristotelian logic, for example, which is evidently based on Greek grammar. The differences between Latin, French, English, and German grammatical forms do not result in any difference between aristotelian logic and their respective rules of reasoning, because they belong to the same Indo-European linguistic family. Should this logic be applied

to Chinese thought, it will prove inappropriate. This fact shows that aristotelian logic is based on the structure of the Western system of language. Therefore, we should not follow Western logicians in taking for granted that their logic is the universal rule of human reasoning.[7]

In so far as the object of logic lies in the rules of reasoning implied in language, the expression of reasoning must be implicitly influenced by language-structure, and different languages will have more or less different forms of logic. Hence the difference between Chinese logic and aristotelian logic. The traditional type of subject-predicate proposition is absent in Chinese logic. According to the usage of Western logic, in such a sentence as "A relates to B" the form is not a subject-predicate proposition but a relational proposition. Another sentence like "A is related to B" is in the form in question, because there is the distinction between the subject and predicate. For both forms, however, there is in literary Chinese only one, that is, *chia lien yi* 甲連乙. Although we may say colloquially *chia shih lien yi* 甲是連乙, the function of the *shih* is that of the so-called "empty words" 虛字, which are used only for emphasis or intonation, without any grammatical function. Both of these Chinese propositions mean the same thing, without grammatical distinction except that the latter is more emphatic. Neither is a subject-predicate proposition. *Lien* relates the two terms *chia* and *yi* but it is not a copula.

Regarding the "empty words" such as *che* 者, *yeh* 也, *hu* 乎, *tsai* 哉, *yi* 矣, *wei* 爲, and so forth, they were not primarily so, their original meaning having been lost. Their function is based on their sounds. As such sounds do not have proper characters, they are represented by characters of similar sounds, which are called "borrowed" 假借 words. Such a "borrowed" use denotes only the sound without any implications as to meaning. The original characters had their own meaning. For example, the *wei* 爲 mentioned a moment ago originally meant *hou* 猴 or "apes." It is the sound, not the meaning of the original which is borrowed. In the formula " . . . *che* 者 . . . *yeh* 也 ," *che* serves the function of a comma and *yeh* that of a full stop. According to the types of language mentioned above, the referential and the emotive, the Chinese "empty words" are emotive words. These empty-emotive words are closely related to the ideographic nature of Chinese characters, on which we will have more to say later. Now it suffices to say that aristotelian logic is based on the sentence structure characterized by the subject-predicate form. Should we alter the sentence structure, the validity of the traditional aristotelian logic may be questioned. With these preliminary remarks we may proceed to a discussion of the differences between the Western linguistic family and the Chinese language, and their respective influences on logic.

[7] [See S. I. Hayakawa, "What is Meant by Aristotelian Structure of Language?" *ETC.* 5.225-230, Summer 1948. ED.]

V

WESTERN THOUGHT is in the last analysis confined to aristotelian logic although later developments in logic have gone beyond the aristotelian type. Modern mathematical logic, for example, is only an extension of formal logic. In no way can it unify all the forms of logic. The reason why Bertrand Russell is opposed to the idea of substance lies entirely in the fact that he has discovered a new logic not based upon the form of subject-predicate proposition. As a matter of fact, however, this new system of logic applies, apart from mathematics, only to the physical sciences. It is not applicable to the social sciences. Therefore, traditional logic is still the "living logic" in the mind of Western thinkers. Now it can be shown that the "ten categories" and the later modified "five predicables" in aristotelian logic are based on Greek grammar. And so long as definition and division are derived from the "ten categories" and the "five predicables" they in their turn are limited by Greek grammar. The "fallacies" pointed out by Aristotle are essentially those found in the Greek language.

Apart from the obvious examples mentioned above, the basis of aristotelian logic may be seen definitely to lie in the subject-predicate form of language structure. It is seen in the English sentence "it is," which means "it exists." The verb "to be" has the meaning of existence, and Western logic is closely related to the verb "to be" in Western languages. It must have occurred to the readers of Plato that the verb "to be" is quite rich in meaning. Many philosophical problems come from it. Because the verb "to be" has the meaning of existence, the "law of identity" is inherent in Western logic; without it there can be no logical inference. Western logic, therefore, may be called "identity-logic."

The law of identity does not merely control logical operations such as deductions and inferences but also influences concepts of thought. As we know, Aristotle's philosophy was made possible entirely by the use of "identity-logic." For him the substance is merely derived from the subject and the verb "to be." From the latter, because its implication of existence leads naturally to the idea of "being," and from the former because in a subject-predicate proposition the subject cannot be eliminated. From the indispensability of the subject in a sentence, only a short step leads to the necessity for a "substratum" in thought. For example, when we say, "this is yellow and hard," yellowness and hardness are the so-called "attributes" which are attributed to something, the something in this case being "this." The "something" in general is the substratum. With a substratum emerges the idea of "substance." The idea of substance is indeed a foundation or fountainhead for all other philosophical developments. If there is any description, it becomes an attribute. An attribute must be attributed to a substance, thus the idea of substance is absolutely necessary in thought in the same way as the subject is absolutely necessary in language. This is the reason why

in the history of Western philosophy, no matter how different the arguments may be, pro or con, about the idea of substance, it is the idea of substance which itself constitutes the central problem.[8]

The English word "it" also has its own peculiarities. It is a non-definitive. It denotes *something,* but not what. Once the *what* is stated there develop the subject and predicate, or in other words, the substance is characterized by its attributes and the attributes are attributed to the substance. Thus, the separation between existence and whatness was the fundamental condition under which the concept of the substance was born. And this condition is expressed only in Western language-structure. It may be agreed then, after considering the peculiarities of the verb "to be" and the word "it," that many philosophical problems are merely problems of language.[9]

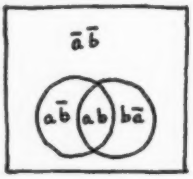

FIG. A

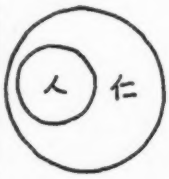

FIG. B

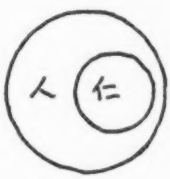

FIG. C

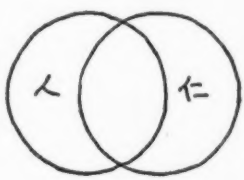

FIG. D

THE CHINESE language has its own peculiarities. First, it is not essential for a Chinese sentence to have a subject. It is often understood. In a sentence like *hsueh erh shih hsi chih pu yi yueh hu* 學而時習之,不亦悅乎 ("When we study and constantly review it, is it not pleasant?"), or *kou chih yu jen yi wu o yeh* 苟志於仁矣,無惡也(" If there is devotion to benevolence, there is no evil"), the subject is eliminated. Examples of this kind are too numerous to mention. The above two are random examples from the *Analects.* Secondly, in Chinese there is no verb "to be" comparable to the English form. The colloquial *shih* 是 does not convey the idea of existence. The literary *wei* 爲 on the other hand conveys an idea of *ch'eng* 成 which means "to become." But in English "becoming" is exactly opposite to "being." Such a formula as " . . . *che* 者

[8] [On subject-predicate structure, see A. Korzybski, *Science and Sanity: An Introduction to Non-Aristotelian Systems and General Semantics* (Lancaster, Pa. 1933), pp. 62, 85, 92, 131, 189, 190, 224, 306, 371. On "substance," see A. J. Ayer, *Language, Truth and Logic* (New York 1936), pp. 28, 32-3, 50, 195. ED.]

[9] This view differs from that of the Vienna school in that, according to that school, once language is clearly defined, some problems will cease to exist. But it seems to me that there are problems arising from language which indicate emotive drives which cannot be eliminated.

. . . *yeh* 也 " does not mean anything identical, and consequently does not constitute a logical proposition in the Western sense. If we say "*jen che jen yeh*" 仁者人也 , we cannot say the first 仁 is the subject and the second 人 the predicate. In such a sentence the idea cannot be expressed diagrammatically, as is often used in Figure A in the case of Western logic.

The other figures B, C, D cannot convey the exact idea of the sentence. It may be either of the three, or it may be in between the three. This is the best proof of the absence of the word "to be" in Chinese.

VI

WE HAVE SEEN above that Western logic is essentially based upon the law of identity.[10] Division, definition, syllogism, and even conversion and opposition are based upon it. All these are correlated and constitute a system. The basic structure of Chinese thought is different from this system. The Chinese system of logic, *if we may call it a system, is not based upon the law of identity.*

Let us begin with Western logical division. As it is based on the law of identity, it must be dichotomous in such forms as "A and not-A," "literary books and non-literary books." Cases like "A and B" or "Good and Evil" are not dichotomous in form because besides A and B there may be C and besides Good and Evil there may be Not-Good and Not-Evil. Thus, there is the need in classification for the rule of exclusiveness. But Chinese thought puts no emphasis on exclusiveness, rather it emphasizes the relational quality between above and below, good and evil, something and nothing. All these relatives are supposed to be interdependent. In a sentence like *yu wu hsiang sheng, nan i hsiang ch'eng, ch'ang tuan hsiang chiao, ch'ien hou hsiang sui* 有無相生, 難易相成, 長短相較, 前後相隨 ("Something and nothing are mutually generative; the difficult and the easy are mutually complementary; the long and short are mutually relative; the front and the rear are mutually accompanying"), we have a logic of a quite different nature.

Next we come to the discussion of definition. In Western logical definition it is necessary to make the sign of equation between the "definiendum" and the "definiens." For example, "a triangle is a portion of a plane bounded by three straight lines." But in Chinese thought the problem of equation between the two is never thought of. For example, "wife" is denoted as "a woman who has a husband."

This cannot constitute a definition in Western logic, in which it must be condemned as a fallacy, or as begging the question, but it is characteristic of Chinese logic. *Chuan chu* 轉註 or the "inverted use of a word" in classical commentaries belongs to the same category. So also the "metaphoric" use or *chia*

[10] The rules of "contradiction" and "excluded middle" are simply corollaries of the law of identity.

chieh 假借. The most important concept in ancient China might be said to be concerned with "heaven" (*t'ien* 天), but according to the definition in the *Shuo Wen* 說文, *t'ien* means the "human head" or that which is above the head 天者顚也. It is evident that that which is above the head may not necessarily be "heaven." There may be many other things such as clouds, wind, the moon, birds, and what not. This "indicative" method of definition 指事的訓詁 is quite different from the Western type. Examples of this sort of definition, such as 仁者人也, 義者宜也 are too numerous in the Chinese Classics to need mention here. It suffices here to point out that in addition to its difference from the Western type of definition, a Chinese term may also be explained or indicated by another term similar in sound and associated in meaning. To explain a term by means of others of similar sound is inconceivable in Western logic, for Western logic always aspires to be detached from language, and the explanation by means of sound is merely linguistic, it contains no logical implications. In short, it may even be safe to say that ancient Chinese literature contains no such method of definition as that found in the West.

It may be well at this juncture to discuss the Chinese characters *fei* 非 and *pu* 不. In an English sentence like "A is not-B" or "A is not B" the affirmative or negative nature is easily determined. But if in Chinese we say *chia fei yi* 甲非乙, it may mean either the first or the second. The difficulty is not so apparent in this simple proposition, but it is clear that conversion is unnecessary and opposition impossible. In the nature of the case it is, therefore, evident that Chinese thought cannot be placed in the Western logical framework. We must give it an independent name.

IT MAY BE proposed to call this type of logic "correlation-logic" or "the logic of correlative duality." This type of logic emphasizes the relational significance between something and nothing, between above and below, and so on. It is expressed sufficiently in the *Book of Changes* 周易. Although modern archaeologists may not accept the *Book of Changes* as one of the earliest records, we cannot say that it does not contain the traditional thought of China. The most dominant note here is the so-called *i yin i yang chih wei tao* 一陰一陽之爲道 ("The positive and negative principles constitute what is called tao or nature"). With *yang* 陽 or the positive principle we presuppose the *yin* 陰 or the negative principle, and with the *yin* we presuppose the *yang*. Each is dependent upon the other for its completion. Other examples like *kang* 剛 and *jou* 柔, *chin* 進 and *t'ui* 退, and *chi* 吉 and *hsiung* 凶 are exactly similar.[11] Should we wish to adopt a terminology much in vogue, we might call this way of thinking an illustration of "dialectical logic." But this term is very ambiguous, and its historical allusions do not allow it to be adopted

[11] Emotive and phlegmatic, assertive and resigned, lucky and unlucky.

in this connection. We will have to be content with noticing that Chinese ways of thinking are different from those characterized by the use of the law of identity. Without defining the different terms used, it is impossible to speak intelligibly in the West. But the Chinese language, which is characterized by the use of correlation-logic, has nothing to do with identification. Rather it uses antonyms to make an idea complete.

Opposition as a means of expression is not only used in propositions like "death without passing away," "a great sound but scarcely audible," "the greatest omen without being visible," "non-resistance means strength," or "the most fluent speech seems to stutter," but it is also used to denote a single term. In the *Shuo Wen,* for example, "outgoing" 出 means "incoming" 進 and "disorder" 亂 means "order" 治. In this case, it is better not to consider the words as having contradictory meanings, because it is the meaning, not the word, which awaits its opposite for a complete illustration of the connotation. For example, *ch'u* 出 must wait for *chin* 進 ("incoming"). Without *chin* there cannot be *ch'u.* Other examples such as *luan* 亂 ("disorder") and *chih* 治 ("order"), and *kung* 貢 ("tribute") and *tz'u* 賜 ("grants") are similar in nature. The explanation of the word "to sell" is also given by means of its opposite "to buy." "To sell" and "to buy" in contrast to each other become clearer, because buying and selling constitute the same transaction when viewed from the different standpoints of the buyer and seller. From this it is seen that Chinese thought is not based upon the law of identity, but take as its starting point relative orientation or rather the relation of opposites. This type of thought evidently constitutes a different system. This system is probably related to the nature of Chinese characters. Being ideographic 象形 Chinese characters put emphasis on the signs or symbols of objects. The Chinese are merely interested in the inter-relations between the different signs, without being bothered by the substance underlying them. Hence the relational or correlational consideration.

VII

THE IDEOGRAPHIC nature of Chinese characters influences not only the structure of the Chinese language but also the thought or philosophy of the people as well. The *Book of Changes* may be taken as the best example. Most probably words were originally coined as token-symbols. Thus, it is said "the sage arranged diagrams 卦 in order to see the significance of any sign 象." Although we are not quite justified in saying that the diagrams are the original Chinese characters, it may at least be granted that they are similar in nature to Chinese characters. The creation of the diagrams served the purpose of divination, but there must have been previously arranged limits of possible combinations for the purpose of divination. Each combination is a possible sign. "Heaven indicates good and bad fortune by signs which are signified by the sages." The "sages"

must have been such heroes of cultural history as Pao Hsi Shih 包犧氏, to whom the discovery of the diagrams was attributed. It may be said that the signs do not merely symbolize something external but also indicate possible changes. For example, it was from the *yi* 益 diagram that farming implements 耜耨 were invented, and from the *li* 離 diagram that fishing nets 罔罟 were invented. Dr. Hu Shih has well said, "Confucius was of the opinion that with the genesis of the signs there come things. The signs are the primeval archetypes after which things are modeled."

According to ancient Chinese thought, first came the signs then the development of things. This assertion is quite different from that of the West. Although platonic ideas have a superficial resemblance, it must be remembered that Plato's "ideas" are self-existent, which is not true in the case of the eight diagrams. As we have seen, Western thought is consistently based on the idea of substance. Consequently there is the need for a substratum, and the final result of this trend of thought gives rise to the idea of "pure matter." It is characteristic of Western philosophy to penetrate into the background of a thing, while the characteristic of Chinese thought lies in exclusive attention to the correlational implications between different signs, such as *yin* and *yang*, *ho* 闔 ("involution") and *p'i* 闢 ("evolution"). It is also because of this fact that there is no trace of the idea of substance in Chinese thought. It should be noted that the presence of an idea gives rise to word-forms with which to express it. In China there is no such word as substance. Such words as *t'i* 體 ("body") and *yung* 用 ("function"), *neng* 能 ("knowing") and *so* 所 ("known") in their function of expressing subject and object came from the translation of the Buddhistic scriptures. It makes no difference to the Chinese mind, whether or not there is any ultimate substratum underlying all things. Because the Chinese characters are ideographic, Chinese thought takes cognizance only of the signs and the relations between them.

IT MUST BE evident thus far that there is not only a close relation between logic and language, but that a logical system must presuppose a philosophy, that is, cosmology and the philosophy of life. Chinese cosmology may be called "significism" 唯象論 or "omenism." The Chinese character *hsiang* 象 which we have translated as "sign" has all the meanings of the English words phenomenon, symbol, and omen, but it must be noted that behind the *hsiang* no concrete things are implied. Its signification is only concerned with human affairs. Thus a sign is for the purpose of giving lessons to the people, and consequently, all the heavenly phenomena such as stars and comets were taken as evil omens. The Chinese cosmogony characterized by omenism is essentially a practical guide to human life. In this point it also differs from the West. It may be true that in Western philosophy, cosmology is a preliminary step to the philosophy of life, but the two cannot be confused. Chinese thought, on the contrary, does not

make any distinction between the cosmos and all the problems of human life.

According to Western tradition philosophy may be classified into ontology, cosmology, and the philosophy of life. In China there are only cosmogony and the philosophy of life, without any ontology or cosmology proper, and even cosmogony is absorbed into the philosophy of life. The reason for this lies in the neglect of the law of identity on the part of Chinese thinkers. Even such expressions in the *Lao Tzu* 老子 as 天地根 *"t'ien ti ken"* and 道紀 *"tao chi"* are only concerned with the origin of the universe. In spite of the fact that the later development in the *Chuang Tzu* 莊子, in such a sentence as "whether an object is made or unmade it remains same thing," is often alleged to be similar to Western substance, the aim of *Chuang Tzu* is only "the proper degree of adjustment." Consequently, his identification of the cosmos with the self is only a sort of mystic experience. In other words, he is concerned with "participation" or "transduction" [12] rather than with the problem of existence. The book *Chuang Tzu* has a mixed origin. It is doubtful whether there may not have been insertions and alterations on the part of the Wei and Chin scholars, but it is evident that the author's ideas are more or less similar to those of the Hindus.

The later cognizance of the problem of substance on the part of the Chinese is due to the influence of India. The ethical systems of the Sung and Ming dynasties are merely reactions against Buddhism. It is often said that Western philosophy began with the idea of substance and later got rid of it, and that China originally did not have it — but later acquired it. She acquired it through cultural contact, a fact which raises problems which cannot be discussed here. Our problem is whether or not there are original forces which still underlie Chinese thought, whether, for example, the Chinese mind is still characterized by neglect of the idea of substance. The weight of evidence, in spite of abundant Western influences, is that it is.

VIII

BECAUSE the idea of substance is related to the idea of causality most of the sciences are still determined by the concept of causality. At this point it may be said that Kant was the first to reveal the mystery of Western thought. He is not surpassed by anyone, even today. He puts the idea of reciprocity between the ideas of substance and causality in order to make the three interdependent. Consequently, wherever there is causality there must be reciprocity, and wherever there is reciprocity there must be substance. No one of the three is dispensable. From this we may learn that the idea of causality is derived from that of substance. That causality is later combined with substance gives rise to the idea of the atom. On this ground is based our thesis that in Western thought

[12] These terms are borrowed from Jean Piaget, *The Child's Conception of the World* (New York and London, 1929).

religion, science, and materialism are interdependent, a position which is not taken by recent Chinese scholars.

Roughly speaking, there are two forms of religion in the West, the early Greek type and the Christian type. The first is neither monopolized by the Greeks nor is it exclusively Western. It is similar to that of the early Chinese life. It should be remembered in this connection that in Greek mythology there are potentialities of materialism. And the early religion of China, as of all early societies, was close to Nature. But when theology developed it had to be based upon the idea of substance. The idea of the Supreme Being or a Creator is closely correlated with the idea of Substance. Furthermore, it is also closely connected with the idea of identity. Metaphysics, which is based on substance, is religion. An Ultimate Reality is in essence God. Thus it may be maintained that metaphysical or ontological philosophy is a type of religious thought. The logic characterized by the law of identity underlies this type of religious thinking. Finally, it may be said that ontology in philosophy, the idea of God in religion, and the law of identity in logic are in essence one and the same thing.

Spengler [13] has shown that "there is no natural Science without a precedent Religion." Whitehead also maintains that the development of modern science was closely related to the religious beliefs of the medieval ages. So long as science is related to religion it is to be understood that in Western culture the two are but different streams from the same fountainhead. They are not so much opposed as ordinarily assumed. But this should not be understood in causal terms; the one does not determine the other, they are both parallel developments from a common origin. Thus although science and religion are opposed to each other on the surface, they are not opposed in their innermost nature.

Furthermore, Spengler has informed us that Catholic cosmology and materialism are not different things, but the same thing expressed in different terminology. Leaving aside Catholicism, we may say that materialistic thought is based on the idea of atoms, and the idea of atoms is related to the ideas of substance and causality. We may maintain that there are three fundamental categories in Western thought, substance, causality, and atoms. Religion has a foundation in substance. With causality science is developed, and from atoms materialism is derived. Behind these three categories there is another to string them together, namely, that of identity. The French philosopher Meyerson has done a service in pointing out that all scientific theories and quests are concerned with identity.[14] It may be easily seen that with identity there must be substance; with substance there must be causality; and the atom is between the two. Thus Western thought is essentially based on these four categories. Without understanding the importance and priority of these categories, we cannot thoroughly understand Western culture and thought.

[13] Oswald Spengler, *The Decline of the West* (London 1926-28), I, 380.

[14] Emile Meyerson, *Identity and Reality* (New York 1930).

CHINESE culture, on the other hand, has no relation whatsoever to the above-mentioned categories. Let us begin with early religious life in China. The Chinese religious life is not very unlike that of the Greeks. Yet religious ideas in China were not associated with the rituals of worship and the institution of official temples. It is not certain whether there were any other deities before the concept of Heaven arose. But so far as Heaven 天 and God 帝 are concerned, the Chinese have never been concerned with them primarily. When we speak of Heaven we have in mind only Providence 天意, which is merely a manifestation of Heaven. In other words the Chinese are concerned with the will of Heaven without being too particular about Heaven itself, because according to the Chinese point of view the will of Heaven is Heaven itself, and to inquire into Heaven without paying attention to its will is logically inconceivable in China. Heaven and the will of Heaven are the same thing. There is not first Heaven and later the manifestation of its will. Because Heaven and its will are identical, the Chinese have never considered Heaven as an entity, and so long as it is not an entity it is not a substance. Thus the Chinese Heaven has no relation whatsoever to the Western substance . . . Through divination the gap between man and Heaven is bridged. The Chinese are only interested in knowing the will of Heaven in order to seek good fortune and to avoid misfortune. As to the nature of Heaven as such they are indifferent. This fact shows that the Chinese have not applied the category of substance to the idea of Heaven and have not taken Heaven as the ultimate stuff of the universe.

ANOTHER POINT of interest is the fact that most of the statements concerning the will of Heaven in the *Shang Shu* 尚書 indicate only the transfer of political power among different dynasties or from one dynasty to another. Political power was alienated in China in two ways, the hereditary and the revolutionary. When hereditary rule was abused it gave rise to revolution. No trouble arose in the case of the hereditary transfer, but there had to be a justification for a revolution, and the justification was found in the will of Heaven. Such a revolutionary transfer has great political and social consequences. That this is attributed to the will of Heaven is evidence that all great changes are beyond the control of the human will, and that the will of Heaven is only manifested in politics and social life. This is just the reverse of the case in the West in which the concept of substance was taken as the basis for its emphasis on religious thought.

In this connection something might be said about the changes and influences of religious life in China and the West. In the West the Greek type of religious life ended by the time of the unification of the Roman Empire, but the new form of religion survived the decay of feudalism. Consequently, Western religion and politics are dual currents. Chinese religious life, which bore many resemblances to that of Greece, was a powerful support of Chinese feudalism, which was simi-

lar to the European. In the time of the *Ch'un-Ch'iu* feudalism was shaken and the thought of the people was no doubt affected. Hence such statements as "the Heavenly path is far and the human path near," and "What has Heaven said? Yet the four seasons are functioning regularly." Confucianism, without having done away with the doctrine of Heaven, pushed it beyond human affairs. This type of thought had a tendency to make religious belief less influential in China, and later there was only politics and no religion. The same trend is manifested in thought, and we may recapitulate by saying that the law of identity in logic, the subject-predicate proposition in sentence structure, and the category of substance in philosophy all have religious thought as a background. This is characteristic of Western culture. Correlation-logic, non-exclusive classification, analogical definition, all have political thought as a background. This is characteristic of Chinese culture.

IX

THESE TWO TYPES of thought differ not only in their categories and their basic rules of logic but also in their attitudes. In putting a question about anything, it is characteristic of Western mentality to ask "What is it?" and then later "How should one react to it?" The Chinese mentality does not emphasize the "what" but rather the "how." Western thought is characterized by the "what-priority attitude," Chinese by the "how-priority attitude." In other words, Western people use the "what" to embody and absorb the "how." The "how" is to be determined by the "what." The Chinese on the other hand use the "how" to imply the "what." The "what" type of thought may develop through religion to science. This is one of the characteristics of scientific thought. The type of thought characterized by emphasis on the "how" can develop only in the socio-political sphere, especially in connection with the problem of ethics. Neglect of the "what" accounts for the neglect or absence of epistemology in China.

That Chinese thought always centers on human affairs while neglecting nature may thus be accounted for. It is often alleged that in Chinese philosophy there are disputes between nominalism and realism and the problem of the relation between Man and Nature, thus implying that Chinese philosophy is similar to Western philosophy. In fact, it is not so. The Chinese interest in the problem of nominalism and realism, as well as in the problem of the relation between Man and Nature, is concerned with socio-political thought and the philosophy of life.

Chinese and Western thought differ also on the question of inference. The syllogism, which is based on the law of identity is the form of inference in Western logic, while the Chinese use analogy instead of inference. The formula mentioned above, *jen che jen yeh* 仁者人也 is a type of analogical thinking. Other examples from Mencius are more to the point, for example, "the goodness of human nature is like the downward tendency of water" and "Does not life

mean nature just as white means white? Does not the whiteness of a white feather mean the whiteness of white snow, and the whiteness of snow mean the whiteness of white jade? . . . if so, then is the nature of the dog similar to that of man?" Such examples in Mencius are too numerous to need further quotation. I. A. Richards in his *Mencius on the Mind* contrasted this type of argument with the Western type. The former may be called the "logic of analogy." This logic, as a matter of fact, though it cannot be appropriately applied to scientific thought is what is largely used in socio-political arguments. Analogical argument indeed is one of the characteristics of political thought. Marxism may be taken as one of the best examples. The formula, Thesis-Antithesis-Synthesis, which is to be applied to any historical process, is analogical in nature. In the same way we may consider the transformation of seeds into trees, as the antithesis of the seeds. So also the theory of the class struggle is argument by analogy. Without criticising the fallacy implied in Marxism it may be profitably observed that the Marxian philosophy is political in nature.

X

THE TYPE of thought primarily interested in politics may also have some connections with language. Thus, Confucius was for the "rectification of names" or *cheng ming* 正名. The rectification of names was not advocated by Confucius for the sake of logic but rather as the means by which the order of society was to be maintained. Hence the saying "If names be not correct, language is not in accordance with the truth of things. If language be not in accordance with the truth of things, affairs cannot be carried on to success. When affairs cannot be carried on to success, proprieties and music will not flourish." The function of the rectification of names lies in the discernment between what is above and what is below, the determination of the superior and the inferior and the distinction between good and evil. Its aim lies in human affairs rather than in logic. For example, to kill a king is called murder or *shih* 弑, implying that this involves a violation of the superior by the inferior. The killing of an inferior by a superior is called execution or *chan* 斬, implying that the executed is justifiably punished according to law. For the emperor to travel is called *hsing* 幸 or "to favor." To "come directly" is called *lai* 來 and "to come to settle" *lai kuei* 來歸. To go from the local districts to the central government is "to go up" or *shang* 上 as in the expression "to go up west" 西上 and "to go up north" 北上. And to go from the central government to the local regions is to "go down" or *hsia* 下, such as to "go down south" 南下, to "go down east" 東下. There are similar distinctions in English as seen already in these translations, but their emphasis is not so obvious and systematic. Dr. Hu Shih considers all these distinctions merely those of parts of speech with grammatical functions. He further remarks "Confucius by rectifying the names is the first logician in China." But such, as we have seen, is not the case.

Further proof may be found in a comparison with Western grammatical changes. Take the English word "sense" for instance. Its changes may take the following forms: senses, sensation, sensational, sensible, sensibility, sensum (sensa), sensationalism, senseless, sensitive, sensitivity, sensibly, sensory, sensorium, etc. All these forms are derived from the same root. Because of the use of inflections, cases, or other grammatical forms the "form" is an essential element in Western thought. In spite of the fact that the aristotelian idea about "form" may be different from that of Bacon and the Baconian "form" from that of Kant, it may be observed that among all of them there is something basic and uniform, namely, the emphasis on the idea or "form." The Chinese characters are ideographic; though they have radicals or *p'ien p'ang* 偏旁 they do not have roots. The radicals are used merely for the purposes of classification, for example, certain words belong to the realm of water and others to the realm of plants. Whenever there is a new idea a new word must be invented, a new word not derived simply from a root. Chinese ideographs are not subject to grammatical changes; there is no inflection, declension or conjugation.

As THE CREATION of new words must be based upon the needs of society, it is interesting to note that the most numerous terms in China come from two realms; the one, kinship, illustrated by *po* 伯 or father's elder brother, *shu* 叔 or father's younger brother, *t'ang* 堂 or paternal cousin, *piao* 表 and *yi* 表 or other forms of cousins; the other from the realm of ethics, illustrated by *chung* 忠 or loyalty, *hsiao* 孝 or filial piety, *lien* 廉 or frugality in taking and *chien* 儉 or frugality in spending. All the fine shadings in Chinese terminology in these two fields may be lumped together in such English terms as brothers, uncles, cousins, frugality. Such a lumping together is justifiable in the West, but in China all the differences must be preserved owing to their social significance, and we may attribute such fine shadings in Chinese terminology to the rectification of names.

It should be explained also why the type of thought which is interested in politics values more highly the logic of correlation. The reason lies in the fact that in social phenomena anything may be considered in terms of correlations, such as male and female, husband and wife, father and son, the ruling and the ruled, the civil and military, and so forth. It is but a short step from this realm to that of cosmology. For example, we say, "with Heaven being superior and the Earth inferior the universe is fixed." Furthermore political affairs may have cosmological implications; for example, from the positive 陽 and negative 陰 principles in the cosmos we may derive the principle of evolution 闢 and involution 闔 underlying the universe and human affairs, finally to be developed into such concepts as proper rule 治 or disorder 亂 in political affairs. It should be remembered that this type of thinking is characteristic of political and social thinking.

Even in this, however, there is a difference between China and the West. It is true that Marxism has done away with the law of identity, and has advocated the law of opposition in thinking, being essentially a philosophy concerned with political and social affairs. But its difference from Chinese thought lies in the fact that while Marxism puts emphasis on opposition and thus class struggle, Chinese thought puts emphasis on the result or adjustment of such an opposition. When Mencius said "mental laborers rule while manual laborers are ruled," the emphasis is on the division of labor, and mutual aid as conceived by him is thus made possible. In contradistinction to the Chinese logic of correlation, the Marxian type of logic may be called the "logic of opposition."

XI

NOW WE ARE in a position to discuss the relation between logical categories on the one hand and human nature on the other. With a given event, we may have different interpretations. For example, sunset is an observed phenomenon concerning which there may be different interpretations, such as, the sun goes beneath the earth westward, or, the earth turns eastward. It is therefore that identity, substance, and causality are all interpretations, or concepts employed in the act of interpretation, and these concepts themselves are interpretative in nature.

But it may be asked, from what do these interpretations arise and how do they become valid? We may borrow the terms from Pareto without following him in their further implications. According to him there are "residues" and "derivations." The first are the emotional drives, and the latter, outward manifestations or rationalizations. A distinction may be made between two kinds of residues, namely, the "residue of persistence" and the "residue of dominance." From the "residue of persistence" develops religious thought; and the category of substance, the subject-predicate proposition, the logic characterized by the law of identity, and the concept of causality developed thereby are its derivations. From the "residue of dominance" comes all social thought, political theories, and the concrete institutions developed thereby. All the derivations are derived from residues which are rooted in emotional drives. In order to express these emotional drives there are all the religious and political developments or derivations. Students of culture cannot afford to forget that these residues, persistence and dominance, are universal traits of man. And, it must be granted that it is not only in the social and political fields but also in the linguistic and mental fields we can see the universal traits of man. The reason why there are cultural differences between China and the West seems to lie simply in the development and underdevelopment of the derivations along certain lines. It is not that the Chinese do not have the "residue of persistence," but in their original culture or derivations it is not developed. But once in contact with India, the Chinese

gave a warm reception to its religion, because Buddhism aroused the "residue of persistence" dormant in the Chinese nature. Chinese culture being underdeveloped in this respect, Buddhism found in China a second home.

Neither is it that the Western people do not have the residue of dominance. Western philosophy is certainly a transformation of religion. Kant, as we have known, in his study of knowledge has given a theoretical justification for the existence of substance. But his *Critique of Pure Reason* has left room for his *Critique of Practical Reason*. If in knowledge the substance is not revealed, it is certainly in conduct that it is realized. In these respects Kant, although trying to analyze Western thought, is limited by it. His attitude, it must be remembered, is the traditional Western attitude, namely, that of using religion as an indirect means for approaching society and politics. From this it may be observed that all Western metaphysics is essentially socio-political in nature. But the relation between the two is not so obvious. It is to the credit of Marxism that this point is clearly grasped. It is a pity however that it has too narrow a conception, in taking classes for society. Metaphysics was taken as merely a rationalization of social and political thought. The pure theoretical aspect of Western philosophy is nothing but a disguised form of socio-political thought. This observation may seem to be exaggerated, but as a matter of fact, philosophy is part of culture and culture always constitutes a total configuration. Politics, society, and human life cannot be divorced from philosophy. It is often alleged that philosophy is primarily concerned with the unraveling of the secrets of the universe, but this view seems very superficial. Two attitudes are usually taken towards the social and political problems of the present. The one attitude seeks to conserve, the other to change conditions. Marxism may have gone too far in identifying idealism with conservatism and materialism with revolutionism, but the fact remains that idealism and materialism are related to society and politics.

It is on this ground that the views of the Vienna school, for example those of Carnap, should be reconsidered. Carnap, considers all philosophical propositions as "nonsense" because they are not verifiable. He needs hardly be reminded that there is much in human knowledge that cannot be verified; and we cannot say that anything that is not verifiable is not true. Rousseau's famous sentence "man is born free" cannot be verified. Yet it helped in contributing towards American Independence and the French Revolution. Social thought is not concerned with verification. It is *unverifiable* but *realizable*. This is the basis for the Determination of Man to combat Nature, as we say in China. Western metaphysical thought is nothing but socio-political theory in another form. And consequently, philosophy has this unverifiable but realizable nature.

BEFORE CONCLUDING this essay, my own theory of knowledge may be briefly formulated. It seems to me that human knowledge may be considered in four groups, each penetrating into and dependent upon the others. The first

is the external "structure," which accounts for immediate sensation. The external world being merely "structure," we can only know its "mathematical properties," to borrow a term from Russell. As to its qualitative nature, we know nothing. But it must be pointed out that these mathematical properties are not static and rigid, but flexible and changeable. The second group is the "sensa," to use the terminology of neo-realism. Our sensation is a curious thing. Although externally aroused, it is different from the external world in nature. There may be said to be correspondence and not identity between the two. Sensation by its nature is something independent. The third group consists of "constructions." The ordinarily perceived tables, chairs, houses, friends, and what not, are "constructions." These constructions are often taken naively as independent self-existent things. But as a matter of fact, these things are constructed through the perceptions of the observer. The fourth group is what we have already discussed as "interpretation." These four groups are interdependent.[15] Comparatively speaking, the first two are more closely related to the external world and, therefore, more objective, while the last two are more closely related to the inner world and, therefore, more subjective. The process from the last two to the first two may be called the process of "attachment," while the reverse may be called that of "detachment." Theoretical knowledge is a process of detachment. After detachment theoretical knowledge still invisibly underlies positivistic knowledge. The problem of validity occurs only after the process of detachment. Because of the fact that there may be different interpretations, the problem arises as to which is right and which is wrong, or which is reasonable and which is not. (As a matter of fact, from the cultural point of view there is only difference, and no correctness or incorrectness.) And this is characteristic of theoretical knowledge to which philosophy, social thought, political theories and religious beliefs all belong.

IN CONCLUSION, we may say we have discussed the following points in order to show that human culture[16] constitutes a whole. First, what is Western philosophy? Second, what is the relation between language and thought? Third, what is the relation between logic and philosophy? Fourth, what is the relation between philosophy, society, politics, and religion? Sixth, what is the relation between theoretical knowledge and perceptual knowledge? Seventh, what is the relation between human nature and culture (between "residues" and "derivations")? Eight, what is the difference between Chinese and Western thinking processes? All these points have been discussed from the point of view of

[15] [Compare Korzybski, *op. cit.*, Chapter XIV, "On Abstracting." ED.]

[16] Culture in our discussion is confined to the mental aspect. Its material aspect being outside the scope of the essay, this is not discussed. This should not however be taken as implying that culture has no material aspects.

philosophy; if they have any bearing on sociology, evaluation and criticism must be left to the sociologists.

Should the reader have had the patience to follow through all the discussion, it may have seemed to him that the writer has been guilty of eclecticism. But there is eclecticism and eclecticism. Should eclecticism prove useful in offering a more synthetic view of all the related problems, it does not need too much apology.

The tendencies of unsophisticated thinking to be 'theoretical' are worthy of much more study than they have been given hitherto. . . It is the common man, *and not the statistician who* 'thinks in averages,' or, rather, in pairs of *contrasting types:* good-bad, healthy-sick, man-woman, white-black. And the common man is likely to handle averages and types as if they applied to the individuals. He will confidently tell you something about 'all Negroes,' in the same breath as he observes an exception.

He is, further, likely to construct his types without a thought as to sampling difficulties. He has a tendency to forget about range and spread. He has, of course, a pragmatic understanding that things and happenings have their causes. Otherwise he would not be able to get on with his several pursuits in a rational way. But particularly when it comes to social questions, causation becomes to the untrained mind divested of complications. Social causation is to him mostly monistic, direct, apparent and simple. The very idea of causal interrelations within a mutually dependent system of a great many factors is usually entirely absent. In his thoughts on social causation he mingles his ideas about what is right and wrong. The unsophisticated mind is not questioning; it answers questions before they are stated.

Generally speaking, it is a fact that 'to think in concrete terms' when reaching for generalizations is the endeavor of theoretical training and a mark of the highest intelligence, while 'theoretical,' abstract and formalistic thinking is the common man's philosophy.

GUNNAR MYRDAL, *The American Dilemma.*

✯ BOOK REVIEWS ✯

Foundations of Metalinguistics

SELECTED WRITINGS OF EDWARD SAPIR, IN LANGUAGE, CULTURE AND PERSONALITY, edited by David G. Mandelbaum. Berkeley and Los Angeles: University of California Press, 1949. 617 pp. $6.50.

DAVID MANDELBAUM has brought together from scattered sources some of the most brilliant work of the late Edward Sapir. Most of the papers are timely and of intrinsic interest; a few, representing viewpoints and approaches which Sapir later repudiated, hold interest for the student of Sapir's intellectual biography. The editor apparently selected on the principle that anything that Sapir wrote must be good for all time; and I must confess I think that he is very nearly right. There is a wealth of material in this collection for the student of general semantics on the conceptual framework of experience and communication. The papers, whether broad in scope and suggestive, whether dealing with minute detail, have the originality which is rooted in fearless inquiry, in exploration without predetermined destination, in the apprehension of data not previously labeled. Some of what is said here is part of the accepted thinking of the present day; yet even here, the particular facets presented, the specific concrete events from which conclusions are drawn, bring new illumination. And much of what is said here is still new; we have just caught up with it. Some is probably still beyond us; I suspect that we shall be turning to Sapir's works for fresh insights and new guidance in years to come.

The first paper in the collection, "Language," is an excellent introduction to this section. I quote from it, since to summarize Sapir's writing would be both wasteful and presumptuous.

> Language is not merely articulated sound . . . Through the unconscious selection of sounds as phonemes, definite psychological barriers are erected between various phonetic stations, so that speech ceases to be a flow of sound and becomes a symbolic composition with limited materials or units . . . It is unwise to speak blithely of "mere" words, for to do so may imperil the value and perhaps the very existence of civilization and personality.

Another paper in this section, "Language and Environment," shows that Sapir was already concerned with this subject in 1911. Here, however, his conception of the "environment" is limited and rigid; and he arrives reluctantly at

the conclusion that "apart from the reflection of environment in the vocabulary of a language, there is nothing in the language itself that can be shown to be directly associated with environment."

The three-hundred or so pages devoted to language cover a great range. There are papers on American Indian languages, on Indo-European, on Semitic; there is an excursion into the function of an international language, and one into phonetic symbolism. There is a provocative article entitled, "Grading: a Study in Semantics," in which he explores "the field . . . of the congruities and non-congruities of logical and psychological meaning with linguistic form"; there is a paean on linguistics: "Under its crabbed technical appearance there lies hidden the same classical spirit, the same freedom in restraint, which animates mathematics and music at their purest."

IN THE NEXT section, on culture, we find his paper on "Culture, Genuine and Spurious," the reprinting of which, to my thinking, is justification enough for the whole volume. This paper, incorporating material which appeared between 1919 and 1924, is Sapir's statement on value. During an era of behaviorism and positivism, when culture was so often presented as an aggregate of meaningless traits, Sapir had the vision and the courage to write of meaning and satisfaction.

> The genuine culture . . . is inherently harmonious, balanced, self-satisfactory. It is the expression of a richly varied, and yet somehow unified and consistent attitude toward life, an attitude which sees the significance of any one element of civilization in its relation to all others. It is, ideally speaking, a culture in which nothing is spiritually meaningless . . . A genuine culture cannot be defined as a sum of abstractly desirable ends, as a mechanism.

In this section, also, Mandelbaum offers the famous monograph entitled, "Time Perspective in Aboriginal American Culture." This is a choice bit of Sapiriana, as the editor informs us. It is a brilliant essay on a method whose premises Sapir's later works implicitly denied: the method of historical reconstruction. In 1916, this paper gave precision and clarity to a method then in vogue; it was a landmark in the development of anthropology. But the editor does not show, either through the order of the papers, or in his eulogistic comments, that this essay is important only as a milestone which Sapir left far behind.

In "Time Perspective," Sapir deals with traits and elements, plucked out of context, atomistically conceived; yet, about three years later, he was speaking of culture as the expression of "a unified and consistent attitude toward life." Here he "risk(s) a guess," instead of trying to discover what *is*. He abstracts from the actual, away from the concrete data which contradict him; yet in his later works it is from the concrete and actual that he derives his superb insights.

He treats as interruptions, to be "corrected" away, the unique occurrences, the "specific influence exerted by a particular shaman," the historic events; yet later he wrote, "the true locus of culture is in the interactions of specific individuals;" and, "Culture is not . . . something given but something to be gradually and gropingly discovered. Elements of culture that come well within the horizon of awareness of one individual are entirely absent in another individual's landscape." Most of all, in "Time Perspective" Sapir conceives of the cultural process as mechanistic; for example, he implies that the length of time a trait has been present in a culture determines the degree with which the trait permeates the culture. Yet in his later works, we find him conceiving of traits as phenomena in what we now call a field. With all this, however, we find incipient in "Time Perspective" much of what Sapir developed later; such as an awareness of continuity in culture and of the importance of value as a factor in the cultural process.

IN THE LAST section of the book we find papers on the general subject of personality. In these, perhaps more than elsewhere, it is evident that Sapir is choosing the field as his unit of study. This is apparently not a deliberate methodological choice; rather it is the natural outcome of his preoccupation with the actual, the holistic, the not-abstracted concrete, the pre-analytic whole. Only a few of the anthropologists who study personality have reached the point where they can see personality within a field. Only recently, we have had titles such as that of the Kluckhohn-Murray volume: "Personality *in* Nature, Society and Culture" (the italics are mine), or of Spiro's article, "Culture and Personality, The Natural History of a False Dichotomy." The title which the editor gives to this section, "The Interplay of Culture and Personality," does violence to Sapir's theory. For Sapir, culture and personality were not entities, to be found in interplay; there is no *and* between them. Aware, independently of Korzybski, of the elementalism of such an *and*, he never uses the phrase "culture and personality" in any of his titles. Culture and personality exist as specific interests *in the beholder:* "These two poles of our interest in behavior do not necessarily make use of different materials; it is merely that the locus of reference is different in the two cases." And again: "It may be questioned whether a dichotomy which seems to depend so largely on the direction of one's interest in observed behavior can be an altogether safe guide to the study of behavior in social situations." He gives a concrete instance of his approach in a paper which he read to a group in 1933, "The Emergence of the Concept of Personality in a Study of Cultures."

> If I see my little son playing marbles . . . nearly everything that I observe tends to be interpreted as a contribution to the understanding of the child's personality . . . He is bold or timid, alert or easily confused . . . But if I see a skilled laborer oiling a dynamo . . . it is almost inevitable

> that my observations take the form of ethnographic field notes, the net result of which is likely to be facts or theories about such cultural patterns as the running of a dynamo . . .

It is sheer joy to read through the volume, to notice how Sapir captures a lifetime of experience and reflection within a phrase, to venture with him while he searches with scholarly precision and insight, transmuting knowledge into wisdom.

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The "Language" of the Bees

BEES: THEIR VISION, CHEMICAL SENSES, AND LANGUAGE, by Karl von Frisch. Ithaca, N. Y.: Cornell University Press, 1950. 119 pp. $3.

THIS LITTLE BOOK may well become a classic of communication between the professional biologist and the lay reader. In its clearly written pages one finds all the pleasure and a great deal of the excitement, while being spared the frustrations of participation in a small but significant scientific adventure. The ease of following Dr. von Frisch's fresh and original mind through a step-by-step analysis of a problem, and through his admirably simple experiments to the startling conclusions can only be appreciated in the reading. Several years ago we heard von Frisch, on his visit to this country, give one of the lectures on which this book is based. The audience, composed of biologists and physical scientists, all of them with a minimum of interest in the behavior of the bee, was visibly moved by the intellectual beauty of his evidence and argument.

This is the first book by von Frisch written in English. But his work on the bee, conducted over some forty years, is widely known and respected by biologists. This is fortunate, as otherwise his results might find many skeptical readers. Of his conclusions von Frisch himself has said: "No competent scientist ought to believe these things on first hearing." The book consists of three chapters, of which the third chapter on "The Language of the Bees" is of special interest to the semanticist. There we find one answer to a question often asked: "Does any animal other than man have a language?"

Naturalists have known for a long time that bees were social animals and that in some way they were able to modify their behavior as a result of contact with each other. Until von Frisch's work many of the facts and practically all of the mechanisms were unknown. Von Frisch himself made many of the critical observations as long as twenty-five years ago, but was unable to make his observations fall into place as they do now with a better hypothesis.

In barest outline some of the basic facts are these. A scout bee can return to its hive and "motivate" inactive bees within the hive to go out in a *particular*

direction, for a *certain distance,* to collect from flowers of a *specific kind* and of a roughly indicated *abundance.*

The detailed evidence presented is very convincing. All experimental bees are individually marked by a system of colored spots which are painted on the bees while they feed. What goes on within the hive is observed through the glass wall of an experimental hive. The simplest message conveyed appears to be: "Fly out and seek in the neighborhood of the hive." It is conveyed by the "round dance," in which the scout bee "turns around, once to the right, once to the left, repeating these circles again and again with great vigor." The bees aroused by this dance fly out in all directions to seek food that has been indicated as being close by. If the scout bee has been fed sugar water from a glass dish scented only with honey, then the aroused workers will feed from any glass dish set out near the hive with the same solution. But if the scout has been fed sugar solution sprinkled on fresh flowers, as for example cyclamen, the workers will seek out only cyclamen flowers even though other flowers are sprinkled with the same solution. Appropriate tests have shown that the scent is transmitted by the dancing bee to her followers in two ways: they smell the scent adhering to her body as a result of contact with the flower, and they taste the scented drops of nectar which she regurgitates from her honey stomach as she dances.

As the distance of the feeding stations is moved out farther, somewhere between 50 and 100 meters, the round dance is replaced by the wagging-dance, which tells not only of the presence of food but that it is far from the hive. The vigor of the dance indicates the abundance of the food; the greater the vigor, the greater the number of bees sent out. The distance is directly related to the number of turns of the dancer's body that are made in a given time. The direction of movement of the bee's body in the straight part of the wagging dance indicates the direction of the feeding place with reference to the sun. Since this direction shifts gradually through the day, the dancing bee within the hive must remember this direction of flight and translate its angle in relation to the sun into the same angle to the force of gravity. For within the hive the dancing bee cannot see the sun and must perform on a vertical honeycomb. The bees aroused by the dance must recognize the angle of the dance relative to gravity and must later translate it into angle of flight with reference to the sun. The question then arises: What happens on a cloudy day when the sun is completely obscured? Apparently bees are able to analyze the polarization of light coming to them from any part of the sky, so that even when they cannot see the sun they can perceive in the sky something which is dependent upon the sun's position in the sky.

One's first reaction to all of this is that the lower animals are indeed capable of a greater complexity of behavior than we have dared to imagine. But we may also consider whether some of our own communicative behavior requires as many brain cells as we like to pretend.

We do not know of any creature other than man and the bee which is able to communicate such abstract information as distance or direction. But as a result of von Frisch's work we are now obliged to look for other examples in the animal kingdom: first, among the other social insects such as ants and termites, and then among the gregarious birds and mammals.

There is no evidence that bees transmit their experiences to the next generation and, therefore, they cannot have a "culture." All improvement in behavior in worker bees must, of course, be transmitted only through the drones and queen (because the workers are sterile). It is not known in detail how the queen transmits the "language" to new workers. Presumably the behavior is transmitted as an inherited behavior pattern.

There are not, we believe, any "lessons" to be learned from the bees. Man's behavior, with few exceptions, is learned behavior. The behavior of the bee, with few exceptions, is instinctive or unlearned. Bees have a small and relatively simple brain with only a few thousands of nerve cells. As far as we know, the bee cannot carry on complex reasoning, yet as we have seen, has evolved a system for communicating some kinds of abstract information. With nine billion brain cells for his use, how much more may we expect of man!

RALPH AND MILDRED BUCHSBAUM
University of Pittsburgh, Pittsburgh, Pa.

Flodhest and Hippopotami

THE LANGUAGE BAR, by Victor Grove. New York: Philosophical Library, 1950, 160 pp. $3.75.

DR. VICTOR GROVE in *The Language Bar,* holds that the English language, because of its complex origin and structure, offers a serious obstacle to the dissemination of the cultural heritage of English-speaking people. According to his thesis, the mixed character of the English vocabulary make it a much more difficult language to master than other European languages. English, he points out, has formed its words from four major sources—Anglo-Saxon, Greek, Latin and French. For this reason, he claims, it is much harder for an English child to learn English than for a French child to learn French or a Dutch child to learn Dutch. The outcome of this situation, he maintains, is that many English-speaking adults are effectively cut off from the full enjoyment and benefits of the accumulated literary treasures which represent the cream of their own civilization.

The most injurious effect of this multilingualism, Grove believes, has been to divide the English-speaking world into two main groups—the highbrows and the lowbrows. Describing this division as "a far greater evil than economic class

distinction," Grove defines two types of lowbrow. One type, he says, "develops a sense of inferiority which leads to blind acceptance of and submission to the 'superior' set, whilst the less self-effacing and more spirited lowbrow, in order to preserve his self-respect, scorns that which is beyond his grasp and declares it to be inferior and not worth having. Thus, the conception of the 'high-brow' is conveniently established as: a person affecting intellectual superiority" (p. 86).

Grove's observations also lead him to distinguish two types of highbrow: first, those whose educational background is such that they can fully understand and appreciate their cultural heritage, and second, those who, lacking this background, feign cultural superiority by attempting to act and speak as if they were among the initiated. It is this second group, he says, which rightfully has caused much of the resentment among those who prefer to be known as lowbrow in their taste.

Perhaps the worst sin of the spurious highbrow, Grove feels, has been to create semantic confusion through his misuses of language. This has not only widened the gap between highbrow and lowbrow segments of the population, but has encouraged the unprincipled use of language by unscrupulous politicians and others as a means of arousing violent emotions through subtly established conditional reflexes to certain key words. In the final chapter of his book, the author indicates how the lowbrows' lack of access to their literary heritage has deprived them of a great source of spiritual nourishment and thereby left them vulnerable to various substitute emotional outlets which can be manipulated by demagogues.

IN ATTEMPTING to evaluate Grove's book, this reviewer would like first of all to consider it briefly from the standpoint of comparative linguistics. Grove has maintained that the vocabulary of English, because of its multiple derivation, erects a barrier greater than that of other European languages, against the dissemination of the cultural and literary heritage. Let us, therefore, examine this major thesis point by point in the light of the findings of modern linguistics.

First, then, what about the English vocabulary as compared with other European languages? As Grove has shown, English does draw heavily both from the Germanic and Romance branches of the Indo-European linguistic stock. That this compound derivation erects a greater barrier to learning than is presented by other European languages, however, does not find support in linguistic evidence. Observations of linguists indicate that children the world over learn to speak their native tongue with approximately equal ease. From the standpoint of speaking, then, there is no evidence to support Grove's contention that it is more difficult for an English child to learn English than for a Dutch child to learn Dutch. From the standpoint of becoming literate, that is, learning to read and write, there are indeed vast differences between languages. The case of Japanese children, who may spend years in learning thousands of Chinese char-

acters, is an outstanding example.[1] With respect to the European languages, however, these differences are not so pronounced as Grove would have us believe. It is true that English children must learn many words whose roots are entirely foreign to them. But are these difficulties any greater than those encountered by German children in learning the relatively complex and obsolete structure of German grammar? Furthermore, are not these same foreign roots a definite advantage to native English speakers in learning other Germanic and Romance languages?

GROVE'S greatest grievance against English is that vast numbers of its word-roots are meaningless to the masses, with the result that for them such words are not "alive." The reviewer would question whether the knowledge of the meanings of roots is always necessary to make the word alive. To illustrate, let us take one of his own examples, the word hippopotamus (pp. 5, 35). In Norwegian, he points out, the word *flodhest* (hippopotamus) is immediately recognized as being composed of two root-words, *flod* (river) and *hest* (horse). The question the reviewer would like to ask is, "Does this knowledge of root-meanings make the word any more alive to the child than the actual sight of an animal labeled 'hippopotamus' or *flodhest* or *bahcoopah* in a zoo or circus?" Grove himself admits that the Norwegian label has the disadvantage of leading children to the assumption that the animal in question may be a kind of horse inhabiting the rivers of his own country (p. 35).

A further point which might be raised is that the roots of some of Grove's examples have no greater apparent meaning in the Romance languages than in English. "Estuary" is cited as an English word whose Latin root-word *aestuarium* (tidal) has no meaning for the Anglo-American man in the street. In contrast, he cites the Dutch equivalent *zeearm* (sea-arm), and the Norwegian words *elvemunning* and *fjordgap*. "The word *elv* stands for river, *munning* for mouth, and *gap* for mouth or throat opening" (p. 37). These are excellent illustrations of his point, but the examples from the Romance languages, French *estuaire*, Spanish *estuario*, Portuguese *esteiro*, and Italian *estuario*, are not equally convincing. They all link up with the Latin *aestuarium*, true enough, but is the meaning of this root immediately apparent to native speakers of French, Spanish, Portuguese, and Italian? The Spanish word for "tide" is *marea*, Portuguese *maré*, French *marée*. Grove's *aestuarium* thus seems to leave Romance as well as English speakers stranded on a tidal flat!

GEORGE C. BARKER

University of California at Los Angeles

[1] The charge that the difference between colloquial and learned vocabularies can contribute to the separation of social classes is apparently much more true of Japanese than of English; see Shunsuke Tsurumi's article, "Japanese Studies of Language and Evaluations," *ETC.*, VII (Spring 1950), pp. 189-202.

✯ CORRESPONDENCE ✯

Report of the Peace Committee

SIRS: In accordance with the resolution on peace adopted at the First Conference on General Semantics, attention of the membership is called to the pamphlet entitled *Memo to a Very Important Person* published jointly by Social Service Committee, Philadelphia Yearly Meeting of the Religious Society of Friends, 1515 Cherry Street, Philadelphia 2, Pa., and American Friends Service Committee.

The problem of peace is presented on the "molecular level," i.e., in terms of the persistent question asked by the individual: "What can I do?" The answer is given in picturesque but definitely extensional terms.

We live in a "goldfish bowl," the *Memo* reminds us, with a couple of billion people in Asia, Africa, Europe, and other Americas looking at us. What they see is us and what we *do* (which they compare with what we *say*). Most of those people being colored are disturbed by our segregation and discrimination practices. Being hungry, they are disturbed by our food surpluses going to waste. Being a great part of the labor force which feeds raw materials into our industrial machine, they wonder why they profit so little from it. Being mostly on the receiving side of bombardments, they are concerned with what our preoccupation with armaments may lead to. Having once dreamed the dream outlined in our Bill of Rights, they are disillusioned by the encroachments upon it.

How can we improve our behavior so that we look better to our neighbors? The *Memo* examines the problem on three levels corresponding to the three roles in which practically everyone functions: as an individual, as a member of a community, and as a member of an organization.

Smith, the individual, can do the following things:

He can write letters, for example to at least one person in another country to create one of the "tiny filaments of understanding on which must hang the bridges of international friendship and good will." He can write to legislators explaining his point of view; to newspapers and radio stations; he can include his views in his ordinary correspondence.

He can open his home to visitors from other lands as well as to members of his community who seem "foreign." He can teach his children what he has learned about the brotherhood of man. He can invite neighbors for conversation about the problems he is concerned about—a good substitute for TV. He can contribute to relief abroad. He can spread the contents of worthwhile books.

Smith, the citizen, can do even more:

He can evaluate the standing of his community with respect to the report of the President's Committee on Civil Rights and list the credits and debits (the "community audit"). He can work toward the liquidation of the "liabilities" in the audit. He can work to organize discussion programs on international affairs, on slum clearance, on aid to displaced persons, on support of the United Nations, on improving newspaper editorial policy, on establishing two-way communication between people and their elected representatives. He can look into the schools and work toward the elimination of fears and hostilities engendered by poorly presented defense programs.

FINALLY, Smith, the joiner, can work through several of the many organizations in this country which form the reservoir of public opinion. Especially important are interracial and cultural programs which contribute to the general level of social health and community morale.

Above all, the *Memo* points out, in a time of crisis and hysteria, each of us can resolve to keep his head and his good humor. Self-insight is, of course, essential to the preservation of sanity. The individual is asked to inquire into his own personal responsibility for the encouragement of the war system, to ask whether the life he leads, the possessions he depends upon, his personal aspirations contain the seeds of war. The individual's responsibility is set in proportion to his area of influence. He can influence the country's foreign policy only in part. Therefore he is only partly responsible for it. But his control of his own life is much more complete. Therefore he is much more fully responsible for it.

The *Memo* contains a sizable bibliography of periodicals, books, and pamphlets, and a list of organizations contributing to the work for peace.

ANATOL RAPOPORT
Chairman, Peace Committee

The Tyranny of Ratings

SIRS: I found Mr. Maloney's article, "The Unknown God," in the winter *ETC.* very interesting. Those of us who are in this business get pretty tired of the slavish adulation of ratings and we are glad to hear someone speak up about them. Mr. Maloney is perfectly right in that there is nothing in the ratings ("audience") that tells whether a show is good or bad and it is frightening to find how few people have any faith in their own judgment. We have always felt that the "audience" deserves much more respect than it ever receives.

BEULAH ZACHARY

Producer, "Kukla, Fran and Ollie"
NBC-TV, Chicago, Illinois

DATES AND INDEXES

THIS ISSUE of ETC. has involved more work and time than any issue since we began in 1943. Indeed, the articles herein were intended originally for the Winter issue. When it became apparent that more time was needed for their preparation, it was decided to postpone them for the Spring issue, and the Winter issue was hastily replanned several weeks after its due date and sent to press. The obvious reason for our troubles is of course the article with all the Chinese type. So we'll tell that story first.

WE FIRST HEARD of this little-known article on the contrasts between Chinese and Occidental language-structures and habits of thought from Professor Marian Smith, of the Department of Anthropology of Columbia University, at a meeting of the A.A.A.S. in Cleveland in December 1950. She told us that if we wanted to see it, Professor Dorothy Lee of Vassar had a copy of the rare and much-prized reprint. Eventually we got around to writing to Mrs. Lee, who had meanwhile lent the article to a friend; we wrote to the friend, who sent us the bound reprint some weeks later. To our horror, we found that if we were to print it in full, we would have to get hold of some Chinese type.

Thereafter, as time permitted, were conferences with Professor H. G. Creel, of the Department of Oriental Languages of the University of Chicago; with Mr. Ryoichi Fujii of the Japanese-language newspaper, Chicago *Shimpo;* with Mr. Edward J. Bryan, who represents our printers, Pantagraph Printing and Stationery Co., of Bloomington, Ill. Loaded down with scholarly and technical advice, we decided to go ahead. Don Ewell, mentioned in these columns in our last issue, typed the text, leaving carefully measured spaces for the writing in of the Chinese letters; Mr. Sadao Ninomiya, a 17-year old high school student of Yellow Springs, Ohio, who happened to be visiting us, wrote in the Chinese characters (although he confessed he had never seen some of them before). Mr. T. H. Tsien, Librarian of the Far Eastern Library of the University of Chicago, meanwhile provided us with biographical information about Chang Tung-sun, the author. To all the foregoing individuals, the Editors owe a profound debt of thanks.

AND NOW for technical details: the English type was first set up by our printers in the usual way, except that spaces were left for the insertion of Chinese characters. The lines of type requiring Chinese characters were then sent to Chicago *Shimpo,* whose job it was to insert the missing letters. Mr. Fujii found, however, that his printing plant did not have all the necessary characters; in order to get those that he did not have, he had to write to Chinese and Japanese language papers in San Francisco, Los Angeles, and Honolulu. Even after all the borrowed characters were rounded up, nine characters were still missing—ideographs that occur so rarely that they are not kept in stock by the majority of Chinese or Japanese printers. These were handwritten and reduced into little zinc cuts. (The reader will notice these handwritten characters and also the fact that the other Chinese type is not always of uniform size.) Finally, after reassembling, proofreading, and dummying up, the pages containing Chinese characters were made into plates so that the Chinese type, which would be damaged in the power presses, could be returned undamaged. (*ETC.* is usually printed direct from type.)

SOME OF OUR READERS are asking as they read the foregoing (and some to whom we have told our troubles have already asked) "What in *hell* did you go to all that trouble for? You can't have more than half-a-dozen readers who can read or care to see the Chinese characters." There are many answers to this question. In the first place, *ETC.* is not simply a journal of propaganda for the dissemination of a point of view; it is interested in *advancing* knowledge of the relations between language-structure and thought. Hence, even if there were not more than a half-a-dozen readers capable of reading the Chinese characters, those readers, able to evaluate Professor Chang Tung-sun's article and therefore *able to go on from where he left off,* need the full text of his article before them. Actually, there are many times half-a-dozen readers of *ETC.* able to read Chinese characters, including not only American and European linguistic scholars, but especially those who read it in the dozen or more university libraries in Japan where *ETC.* is received regularly. It is earnestly hoped that many more articles on language and thought will result from this issue, and that analyses of many more languages will be offered for publication. Try us with Hebrew some time—the typesetting will be comparatively a cinch.

AND THAT'S FAR from being the whole story of this issue. Benjamin Lee Whorf's "Language, Mind and Reality" was first brought to our attention by Mr. A. Herbert Peron, of the advertising firm of Newby and Peron, editor of "Signposts," the newsletter of the Chicago Chapter of ISGS. Originally published in India in a theosophical magazine and therefore unlisted in standard indexes and bibliographies, this article had completely escaped the notice of linguistic scientists in this country. The Editors therefore present this article with pride, and with many thanks to Mr. Peron, who lent us his treasured copies of *The Theosophist.* We are constantly being pleasurably surprised at the variety of interesting and unexpected ways in which the backgrounds, learning, and talents of the ISGS membership manifest themselves.

IRVING J. LEE, whose *How to Talk With People* is the current Semantics Book Club selection, will be teaching at the University of Hawaii, June 23 to August 1. . . . The Summer Seminar and Workshop of the Institute of General Semantics will be held again at Bard College, Annandale-on-Hudson, N. Y., from August 17 to September 1. . . . Earl C. Kelley of Wayne University, David Arthurs and James McCay of Montreal, M. Kendig of Lakeville, Conn., Robert U. Redpath and William Exton, Jr., of New York, have been among the speakers before the Montreal General Semantics Society during the fall and winter season, 1951-52. . . . Cecil C. Kent of Winnipeg spoke on "The Role of General Semantics in Creative Imagination" before the New York Society for General Semantics on April 9.

TWO SHORT COURSES in general semantics, introductory and intermediate, were started at Cleveland College (the Downtown Center of Western Reserve University) on March 28, by Robert L. Behrens. At a meeting of the Detroit Society for General Semantics on March 13, Harry and Eunyce Lawrence and O. S. Reimold II were leaders of a discussion of the articles in *ETC.,* Volume IX, Number 1. Paul H. Pfeiffer, who is teacher of English at Watsonville (Calif.) High School, is teaching general semantics to his senior class. His study and teaching of semantics have led him to ask such questions as these: (1) Can the proportion of empty sound to solid substance be decreased in announcements of courses in schools of education? (2) How would a section in a law book, e.g., Williston on Contracts, be improved by a semanticist? (3) What are the advantages and disadvantages for the American audience of translation of foreign operas into English? (4) How

can we prove to people that "where there is smoke there must be fire" does not lead logically to "where there are many accusations there must be grounds for accusations"? Which reminds us . . .

FLORENCE ELDRIDGE (Mrs. Fredric March), accused of being a "communist sympathizer," was questioned by the Fact-Finding Committee on Un-American Activities in California ("The Tenney Committee") on February 18, 1948. Her courageous testimony of that day is reproduced in full, along with her later comments, in Edward L. Barnett's *The Tenney Committee* (Cornell University Press, 1951). Barrett's book is one of a series of studies of the effects on civil liberties of current governmental security programs. His sober and documented narrative of the flamboyant methods of the Committee and the eventual withdrawal of Senator Tenney from it under the pressure of an enlightened public opinion constitute an instructive chapter in the history of civil liberties in the post-war period.

APROPOS OF Martin Maloney's article, "The Unknown God: The Demonology of American Broadcasting" in our Winter 1952 issue, the following remarks by Edgar Dale in the January 1951 issue of *The Newsletter* of the Bureau of Educational Research, Ohio State University, are especially interesting: "We must avoid using the word *public* as though it were one entity. There is a difference between the public which listens to a soap opera and the public which listens to a symphony. Furthermore, a program may have a large audience and still be a minority audience. . . . The audience for the suds serials, for example, is about one-fourth of the women available. It is a minority audience. The number of people who attend any single A-feature film is 13 to 15 million. Five-sixths of the market is not tapped for that particular picture. Comic strips as a whole may have a majority audience, but the percentage who look at any one strip is likely to be a minority. We should, therefore, speak only about giving certain *publics* what they want."

WRITING IN the March-April issue of *Northwest Architect*, William Gray Purcell, who with Frank Lloyd Wright and George Elmslie served his apprenticeship with Louis Sullivan, states a philosophy of architecture which would seem to make sense from a general semantics point of view: "Today's design, as an esthetic communication, seems aware only of the experience of seeing. . . . Architecture should be held accountable for a free fabric carrying the whole idea of the building and all its functions, physical, mechanical, social, mental and moral as it moves in space, time and mind. We need buildings which are sympathetically conscious of people-in-satisfying-activity. . . . I propose that you substitute for static esthetics a philosophy of forms in a constantly changing development continuum shaped by action-meaning. Such a fluid concept would anticipate total grasp by even the simplest people. Everyone could thereby come with perfect naturalness to understand and be grateful for an expanding and enriched folk life."

THE ADDISON GALLERY of American Art at Phillips Academy, Andover, Mass., has extended until September 30 its exhibition "The NAKED TRUTH and Personal Vision" because of its strong popular interest. Bartlett H. Hayes, Jr., the director, writes: "The purpose of the exhibition is to examine methods of communication in terms of the ideas which are to be communicated and I believe readers of *ETC.* who may be coming to New England during the summer months would be interested in examining the technique." Starting with a variety of nudes, including the nudes of popular pin-up art, the exhibition shows the variety of ways in which different artists abstract from their visual experience.

After a consideration of style "as a means of stating the nature of the truth which is personally envisioned," the exhibit turns its attention to the relations between the visual arts and literature and music. Some 80 items, selected from a variety of styles and epochs placed in unexpected juxtaposition, constitute the exhibition. Mr. Hayes says he will be especially interested in the comments of readers of *ETC.* who may drop in to see the show.

MAURICE E. CULBERG of Chicago, a Charter Member of ISGS, has offered gift subscriptions to *ETC.* to all the branches of the Chicago Public Library that wish to receive it. Since there are 57 or so branches, quite a few new subscriptions are expected. (The main Chicago Public Library has had a subscription from the beginning.) Meanwhile the branches of the New York, Detroit, Boston, and Los Angeles Public Libraries and the main libraries of other large U.S. cities (Philadelphia, San Francisco, Seattle, New Orleans, Pittsburgh, Houston, for example) struggle along without *ETC.* Obviously more Culbergs are needed on a nation-wide scale.

THE DISTINGUISHED British weekly, *New Statesman and Nation,* had in its March 29, 1952, issue the following verse, which indicates that general semantics is not quite as unknown in Britain as we had sometimes feared. We are indebted to Harvey C. Webster, author of *On a Darkling Plain* (a critical study of Thomas Hardy), for calling it to our attention.

A FOOTNOTE TO KORZYBSKI

Dawn: a good wind blows from the sea;
Noon: the shadow falls like lead;
Evening: an amplitude of dying clouds.
The day takes form inside the poet's head.

Or he goes further: 'Dawn—the day's salt'; fact
Seems to dissolve into those tides of dream.
But (as, while concepts like *electron* seem
So sharp and are by that much inexact,

Strict wave-mechanics ripple to a blurred
Unfrozen matrix of activity)
He shows abstractions not as things but skills
And forms the stricter fields of subtlety
Around that simple particle, the word.

And hears dawn lifting from the shadowy hills.

ROBERT CONQUEST

SOME THIRTY-FIVE persons divided into two sections attended an intensive seminar in general semantics conducted by Anatol Rapoport at his home over the first two week-ends in May. . . . Fifty-five persons attended a week-end study conference, "Understanding and Misunderstanding," conducted by S. I. Hayakawa at Hotel Moraine-on-the-Lake, Highland Park, Ill., April 18-20. If Rapoport and Hayakawa would attend to their editorial business over week-ends instead of indulging themselves in reckless oververbalization, *ETC.* might more nearly keep to its schedule in spite of trouble with Chinese ideographs.

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